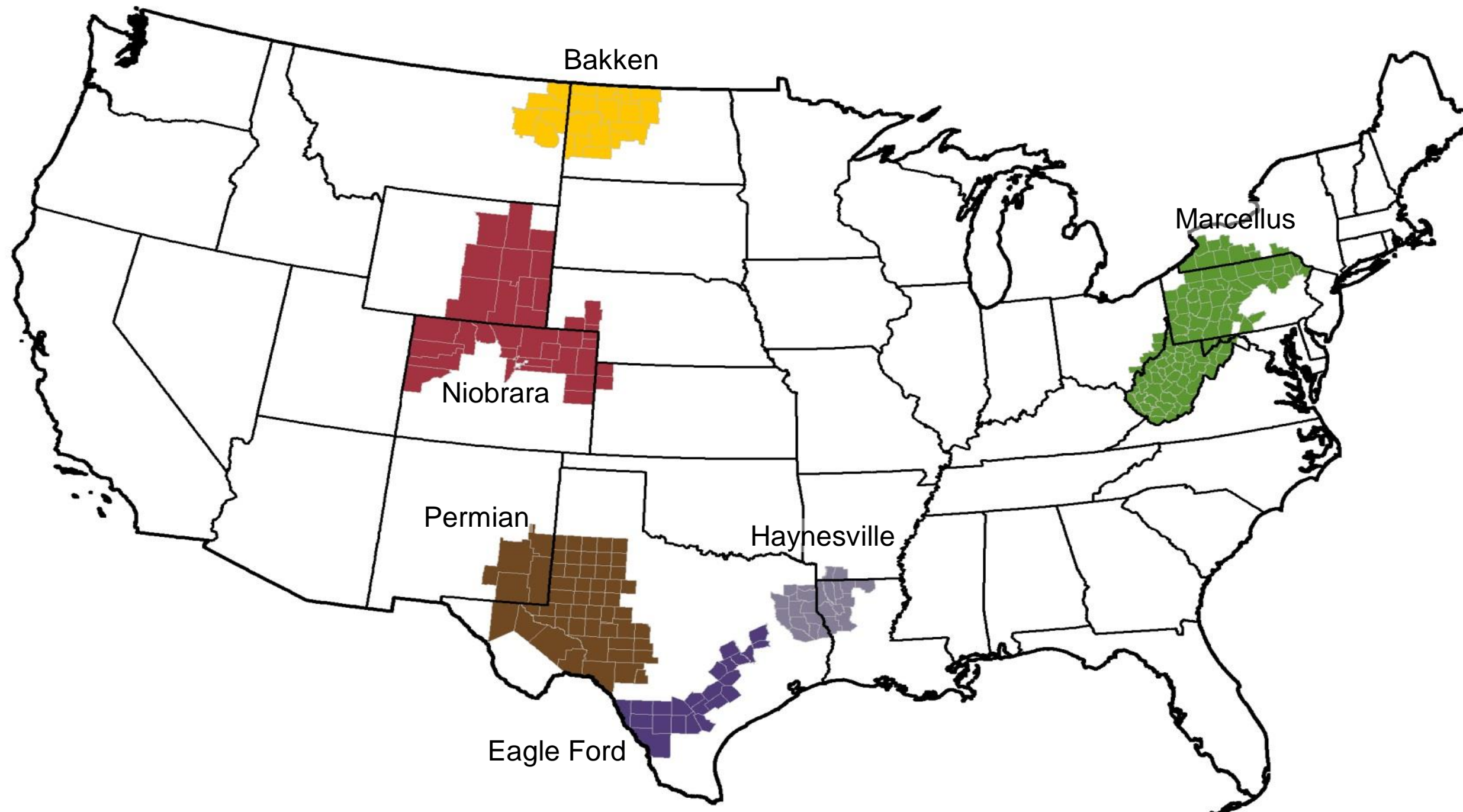




Drilling Productivity Report

For key tight oil and shale gas regions



The six regions analyzed in this report accounted for 95% of domestic oil production growth and all domestic natural gas production growth during 2011-13.

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Bakken	3
Eagle Ford	4
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Year-over-year summary

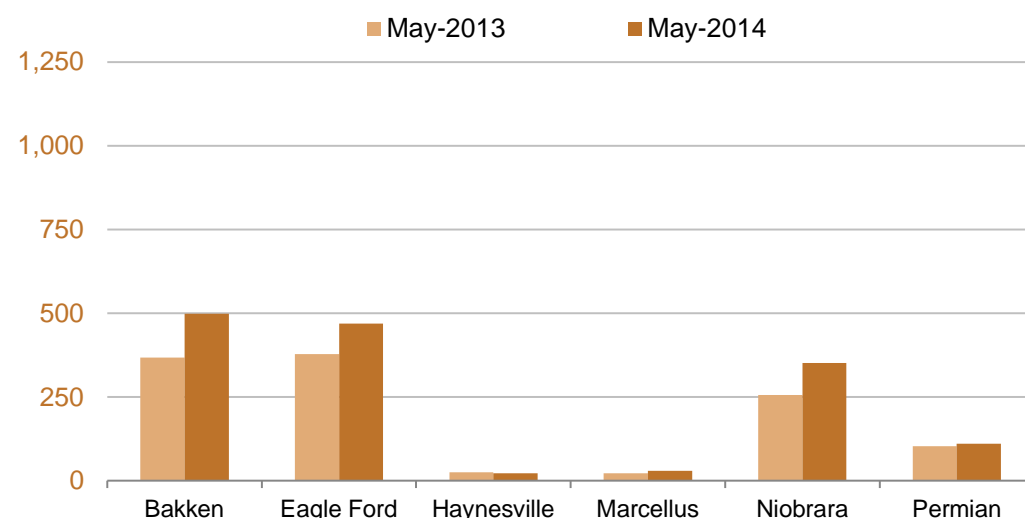
Drilling Productivity Report

April 2014

drilling data through March projected
production through May

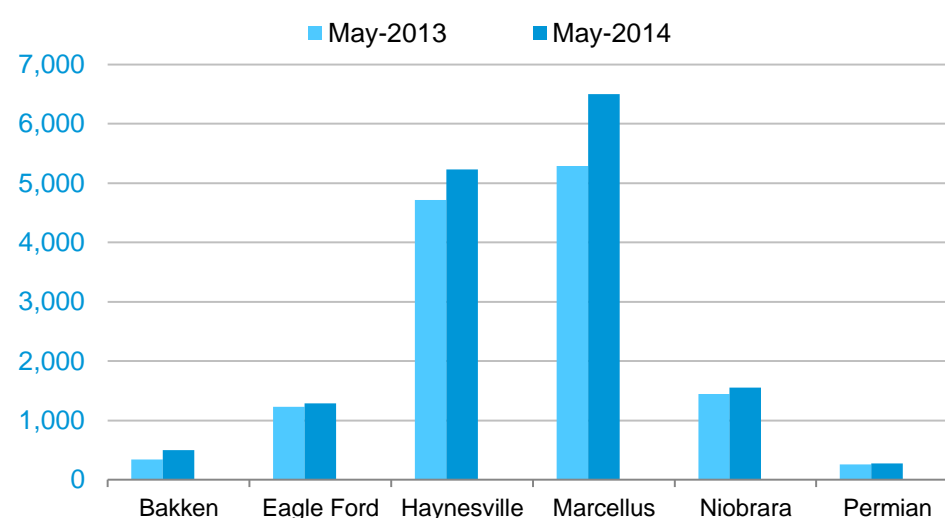
New-well oil production per rig

barrels/day



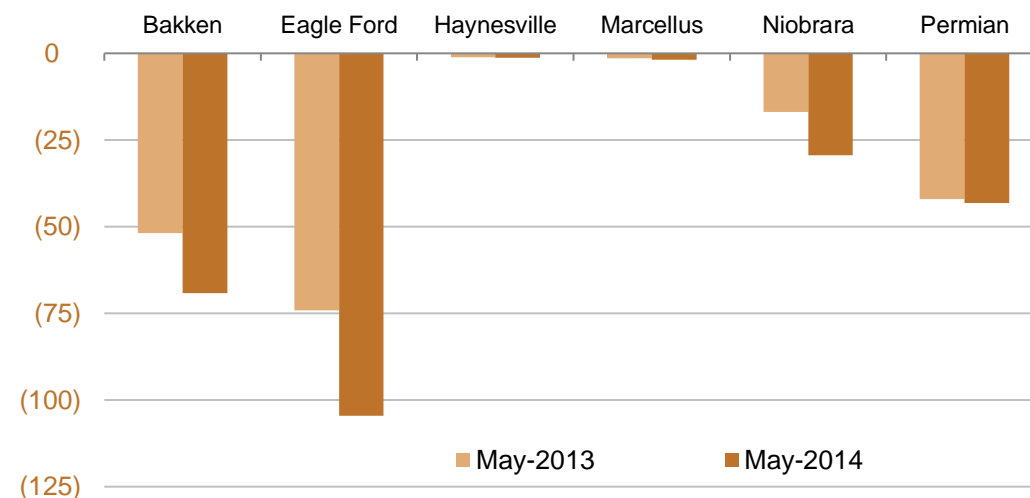
New-well gas production per rig

thousand cubic feet/day



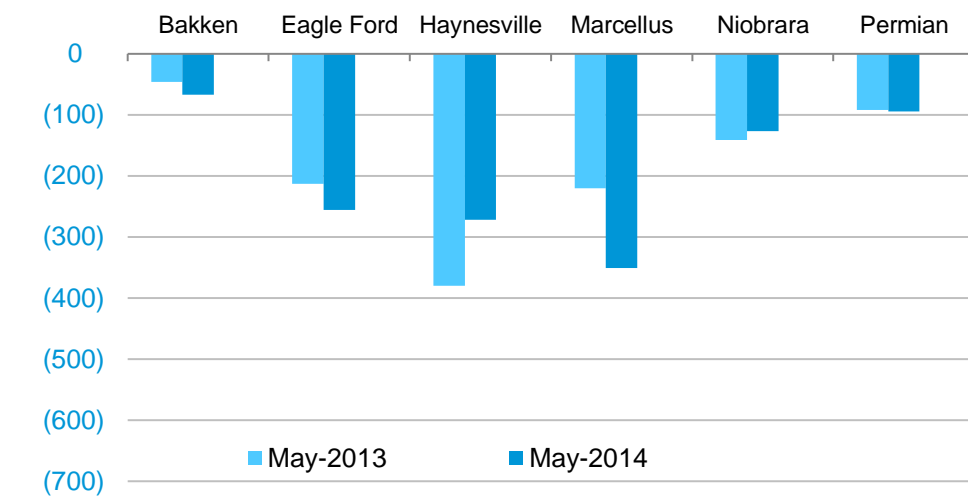
Legacy oil production change

thousand barrels/day



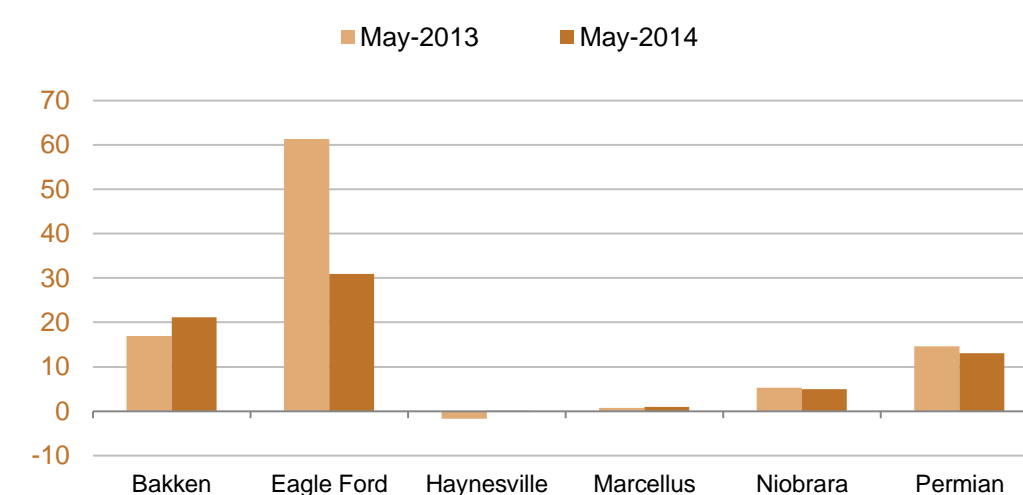
Legacy gas production change

million cubic feet/day



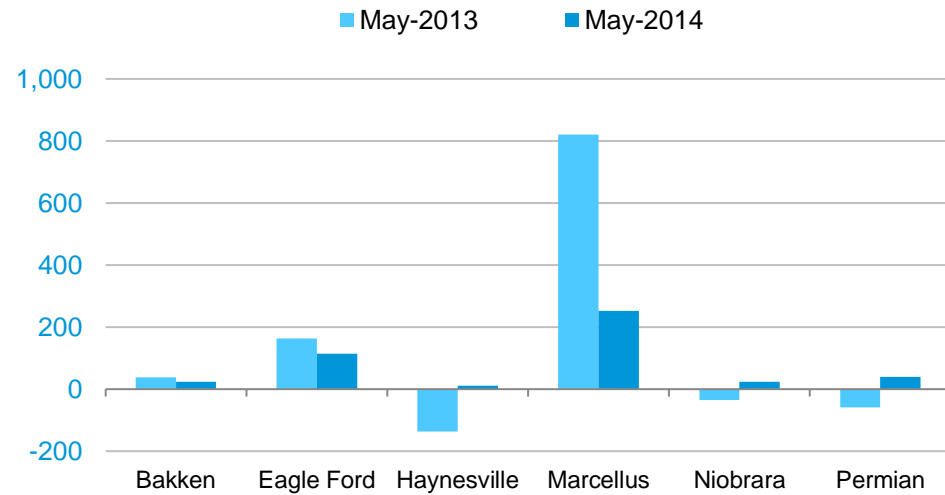
Indicated monthly change in oil production (May vs. Apr)

thousand barrels/day



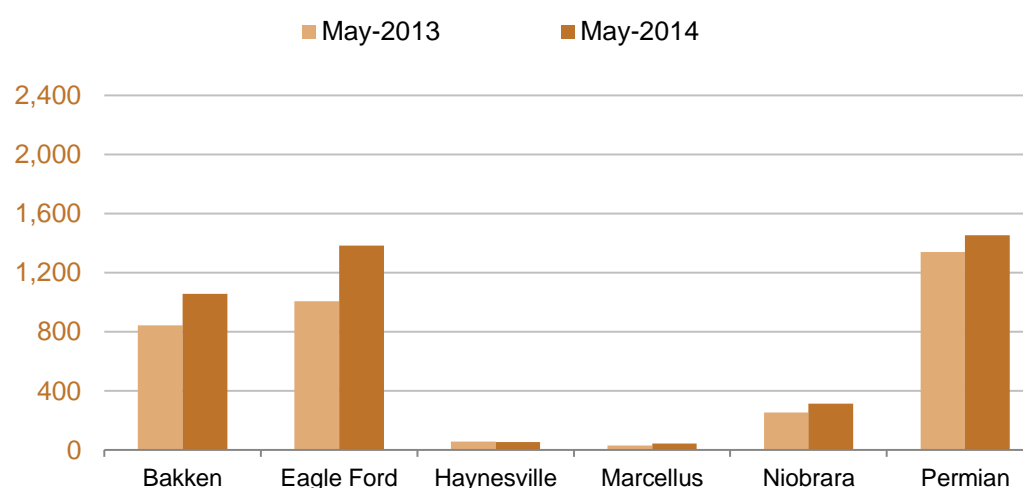
Indicated monthly change in gas production (May vs. Apr)

million cubic feet/day



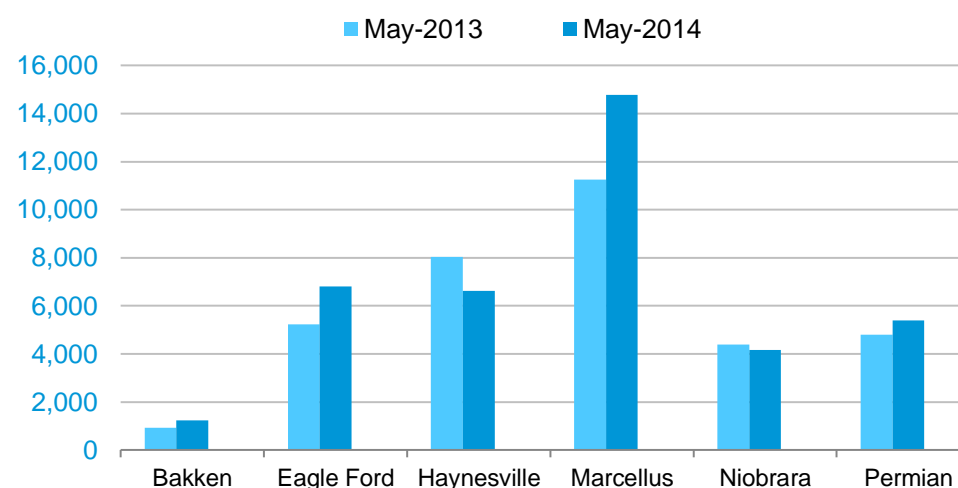
Oil production

thousand barrels/day



Natural gas production

million cubic feet/day



Oil
+7
barrels/day
month over month

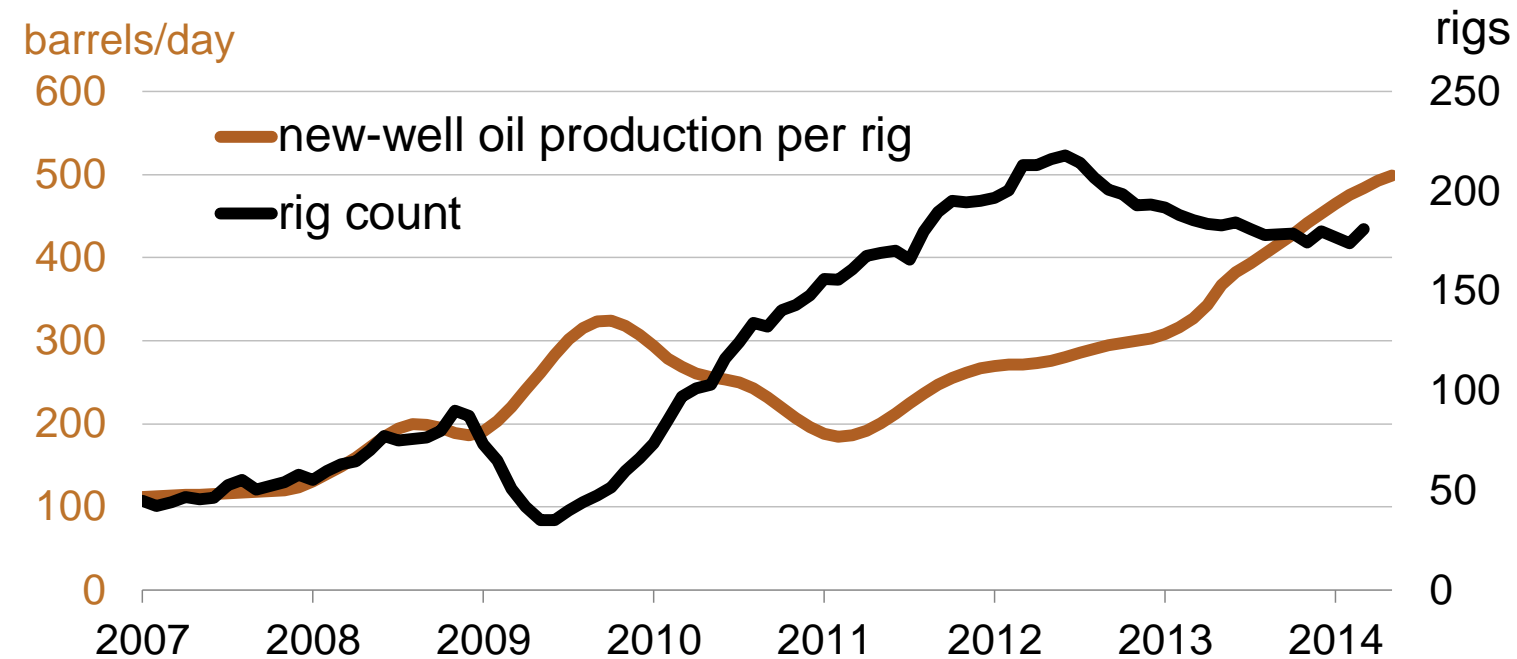
499 May
492 April
barrels/day

Monthly
additions
from one
average rig

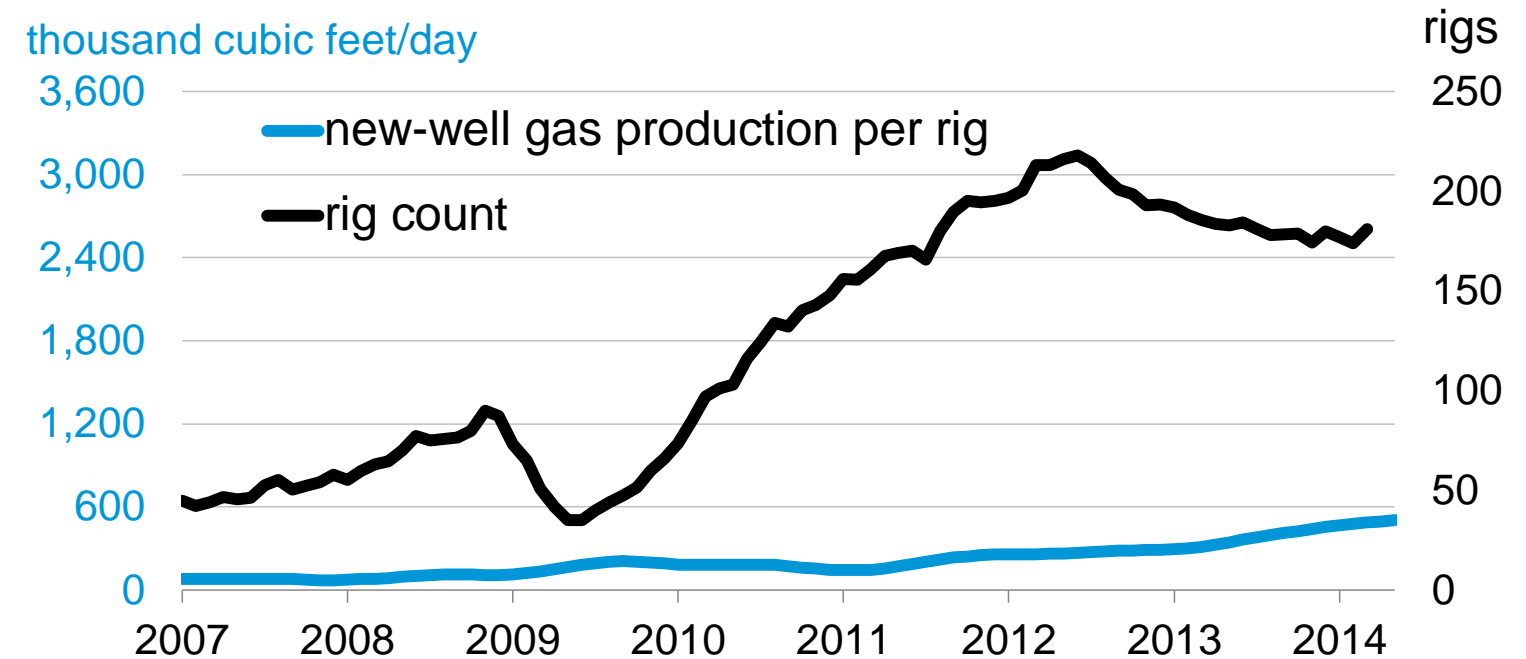
May **505**
April **497**
thousand cubic feet/day

Gas
+8
thousand cubic feet/day
month over month

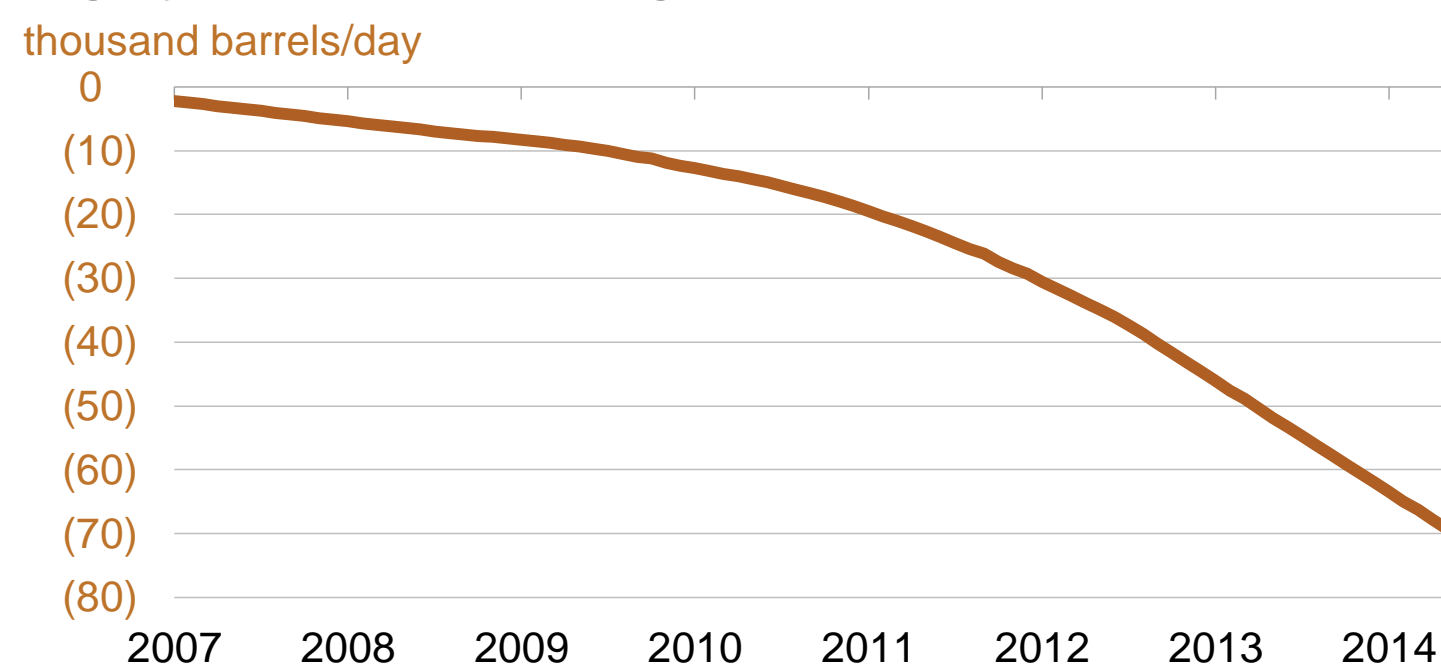
Bakken
New-well oil production per rig



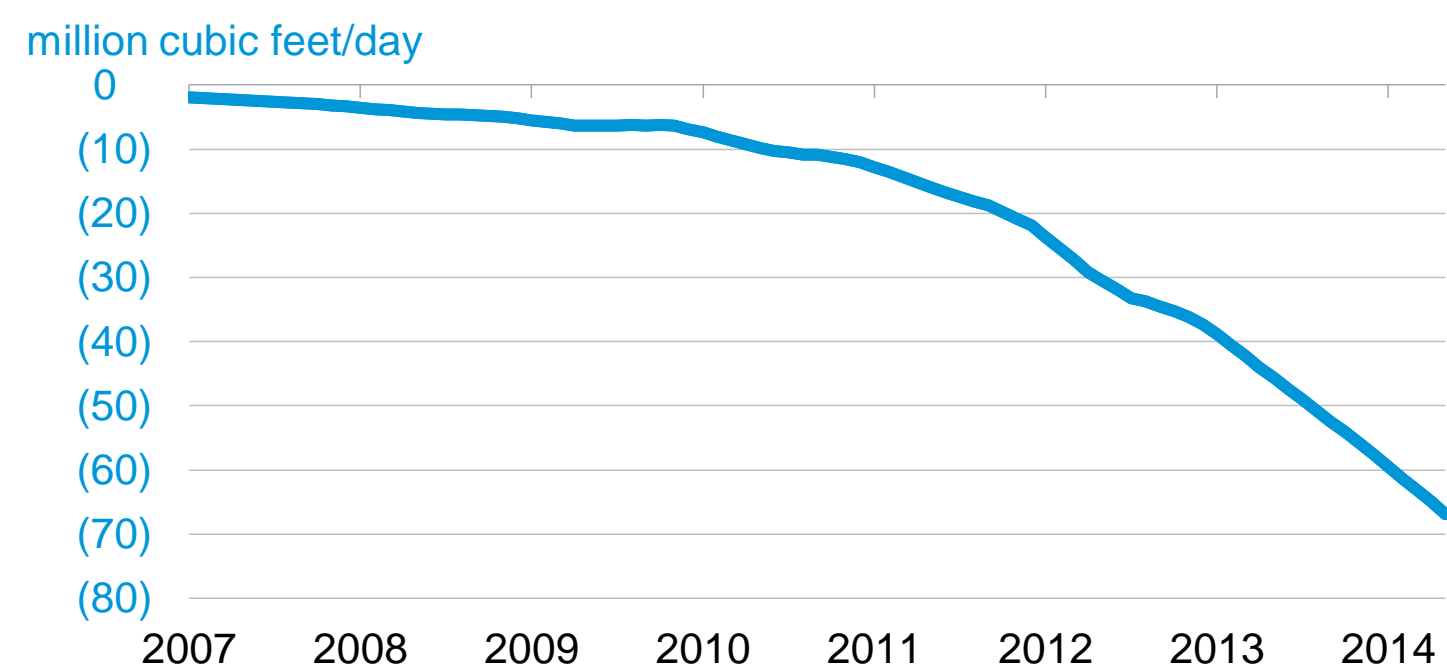
Bakken
New-well gas production per rig



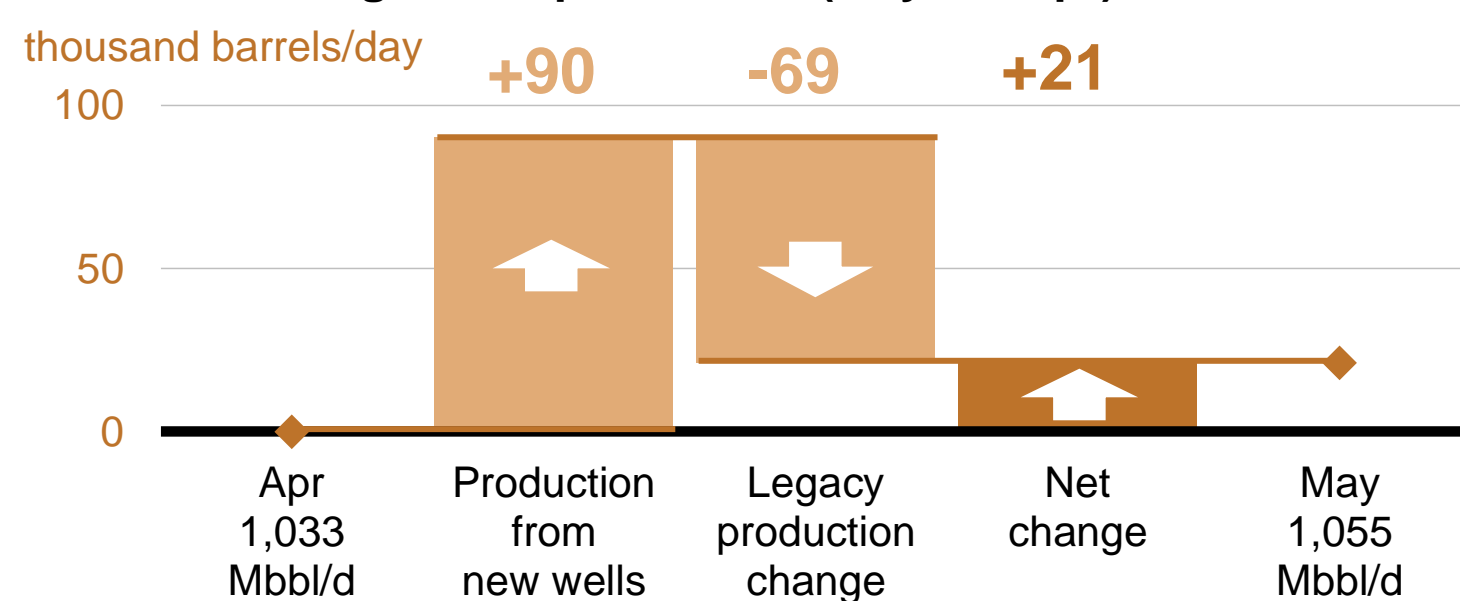
Bakken
Legacy oil production change



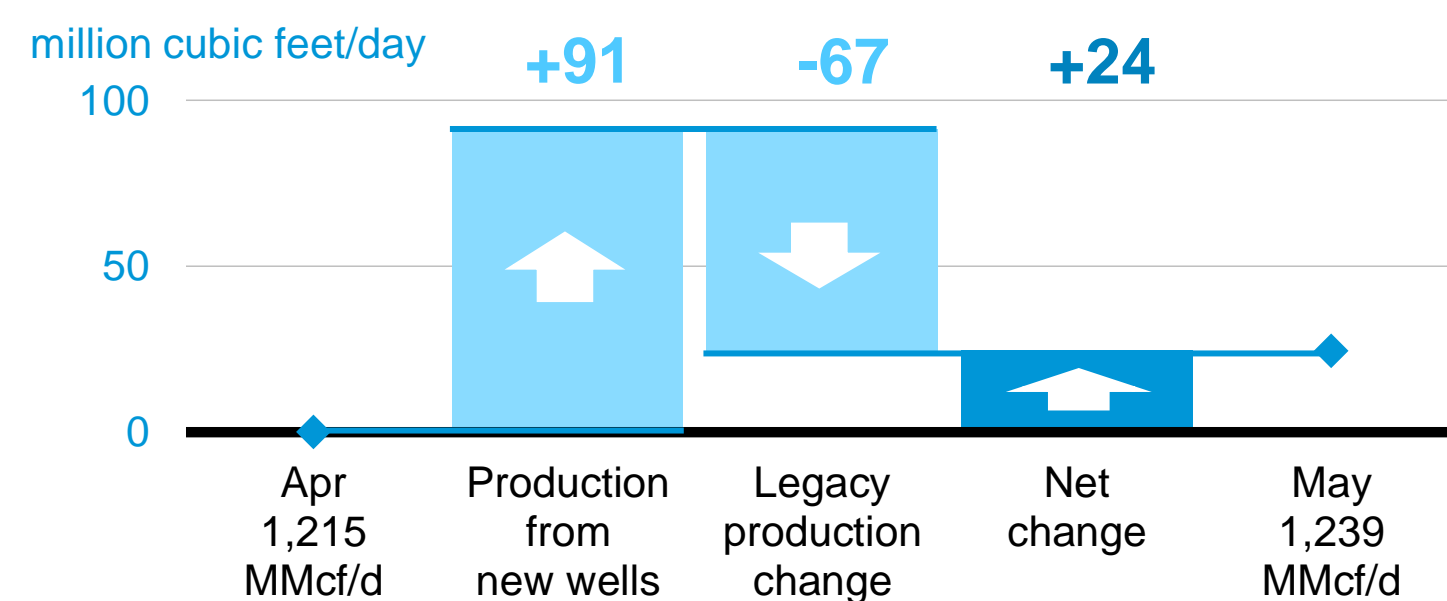
Bakken
Legacy gas production change



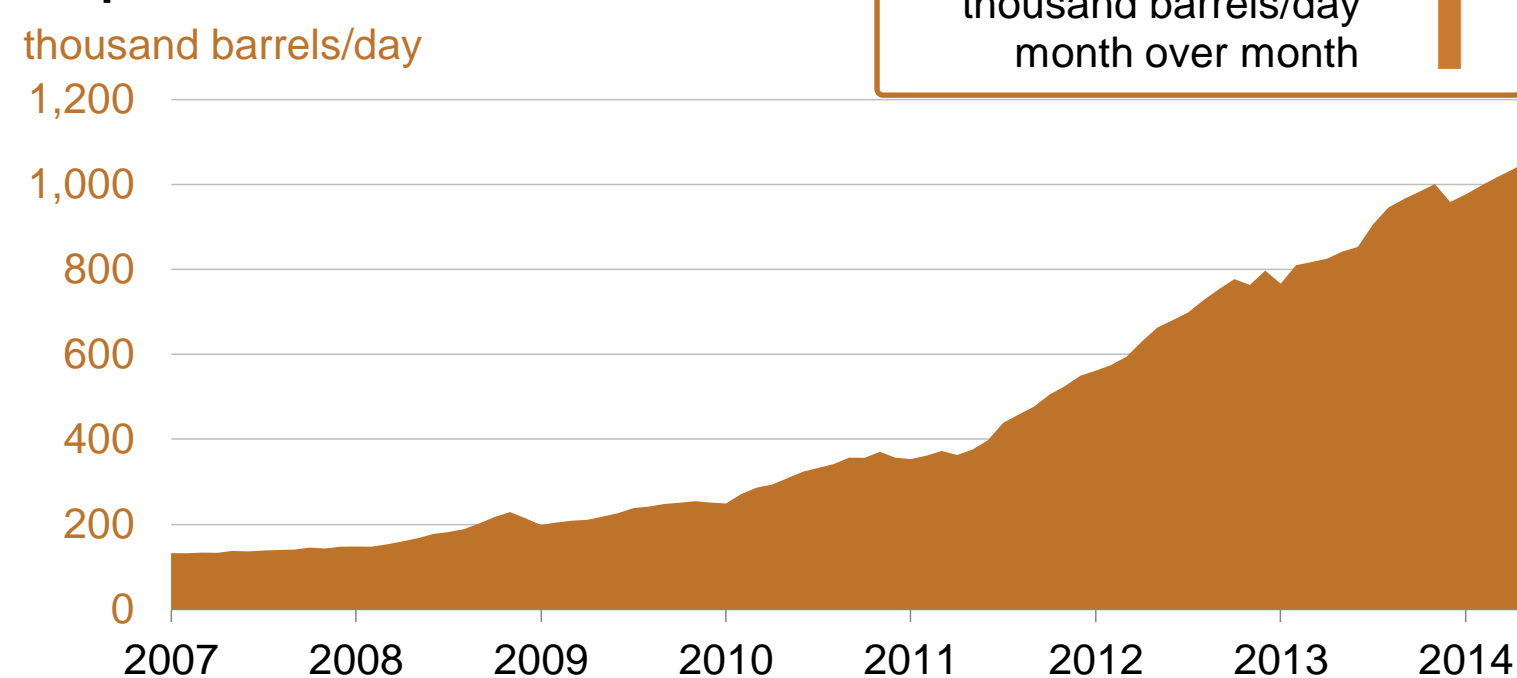
Bakken
Indicated change in oil production (May vs. Apr)



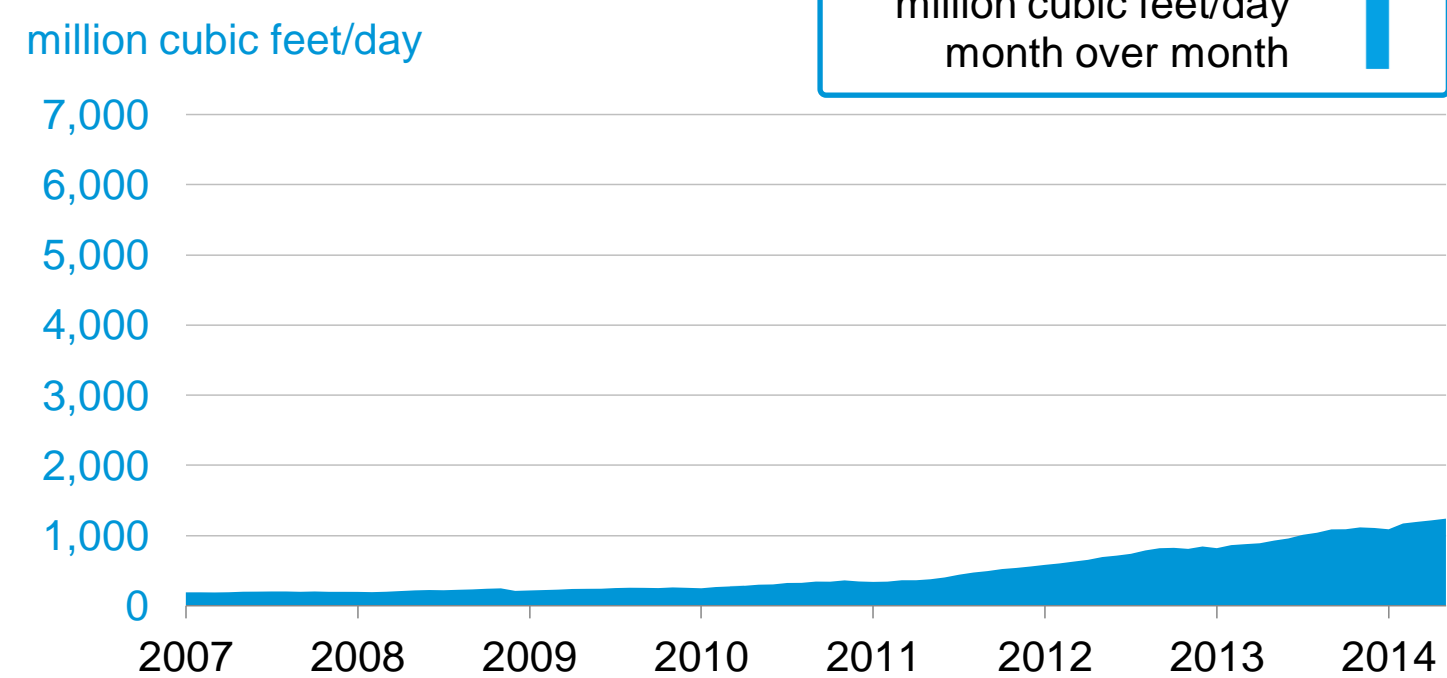
Bakken
Indicated change in natural gas production (May vs. Apr)



Bakken
Oil production



Bakken
Natural gas production



Oil
+7
barrels/day
month over month

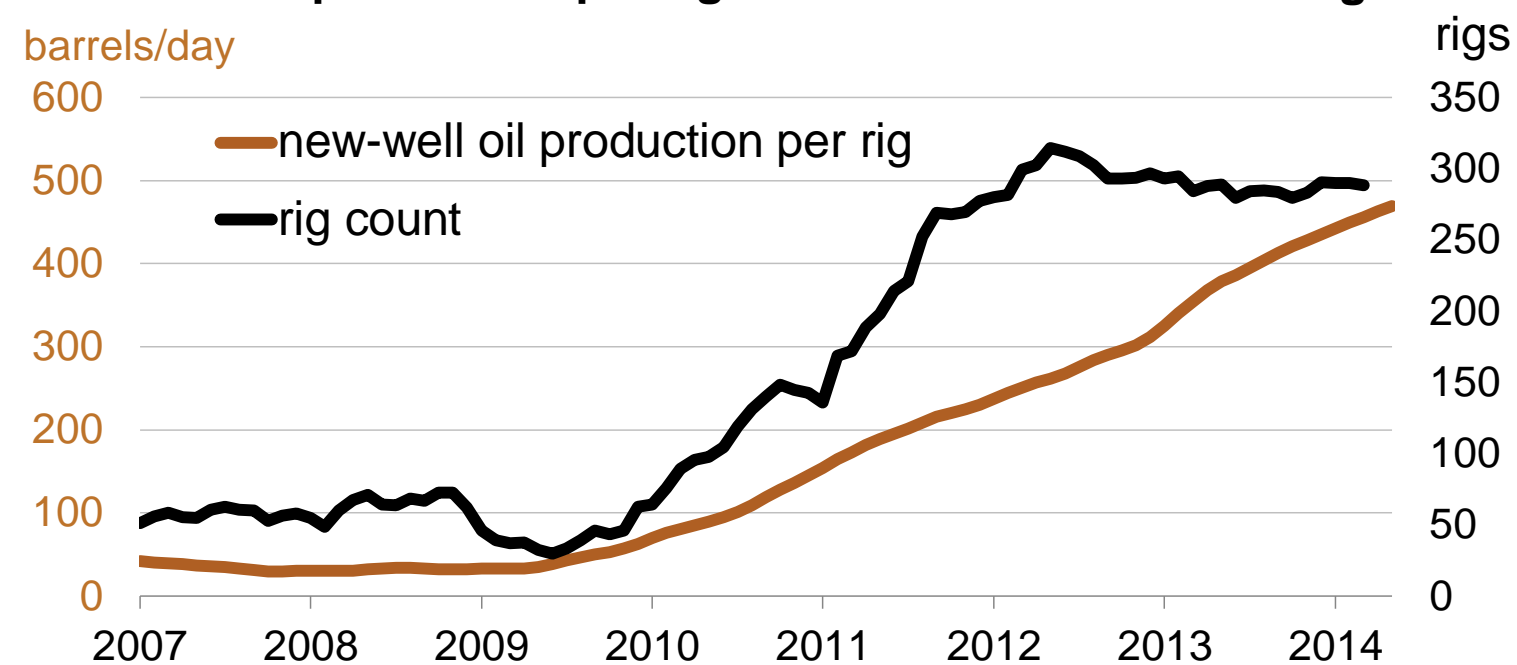
470 May
463 April
barrels/day

Monthly
additions
from one
average rig

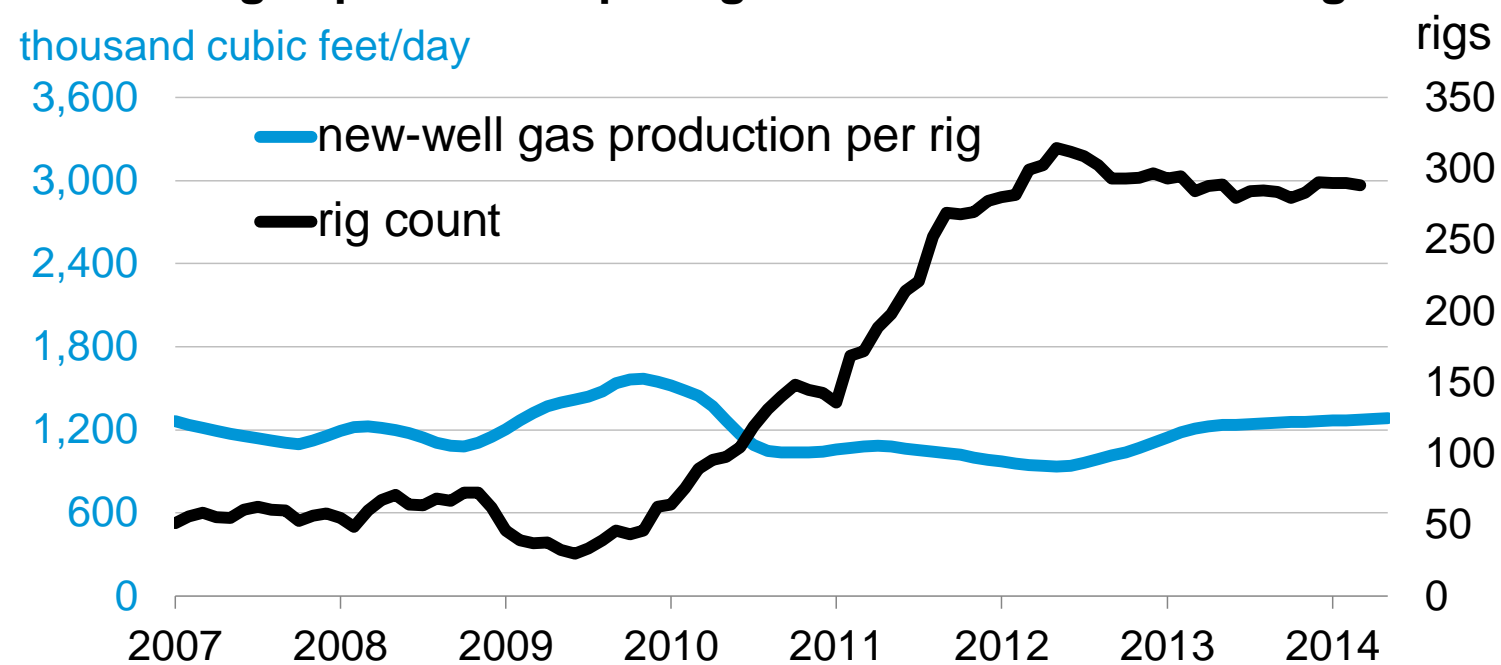
May **1,285**
April **1,279**
thousand cubic feet/day

Gas
+6
thousand cubic feet/day
month over month

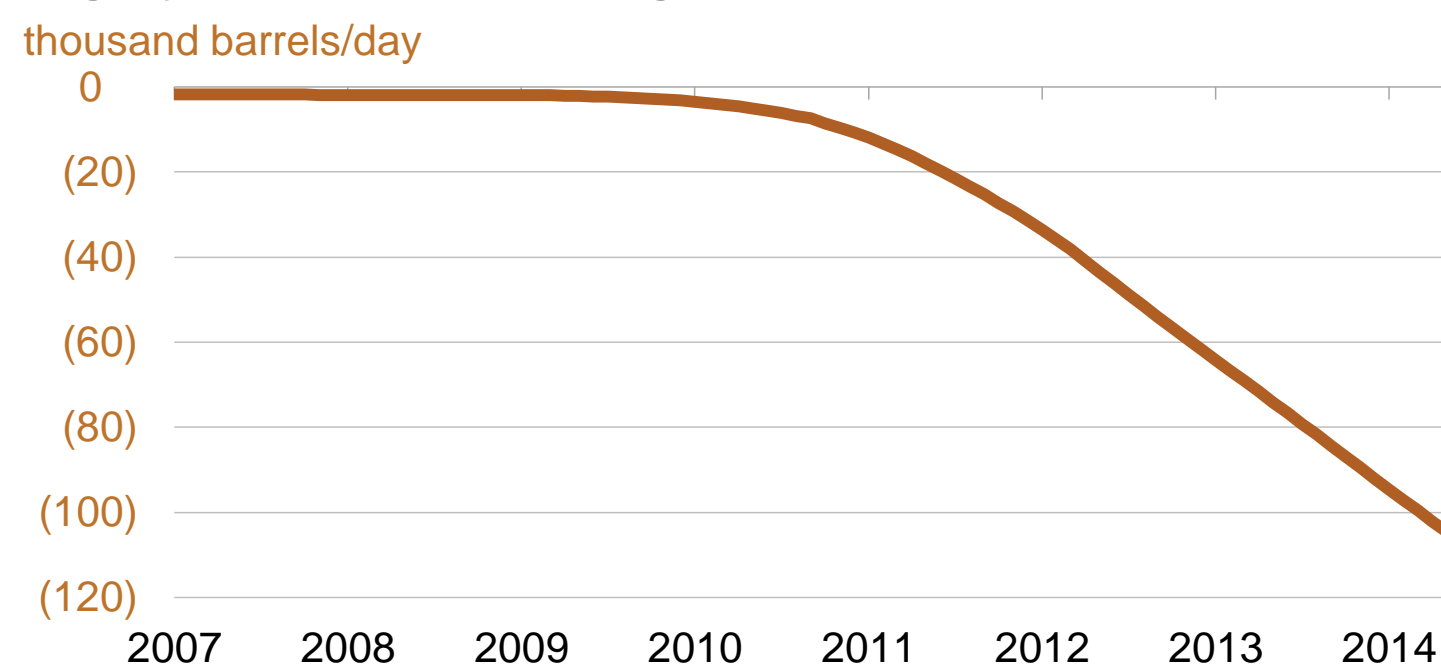
Eagle Ford
New-well oil production per rig



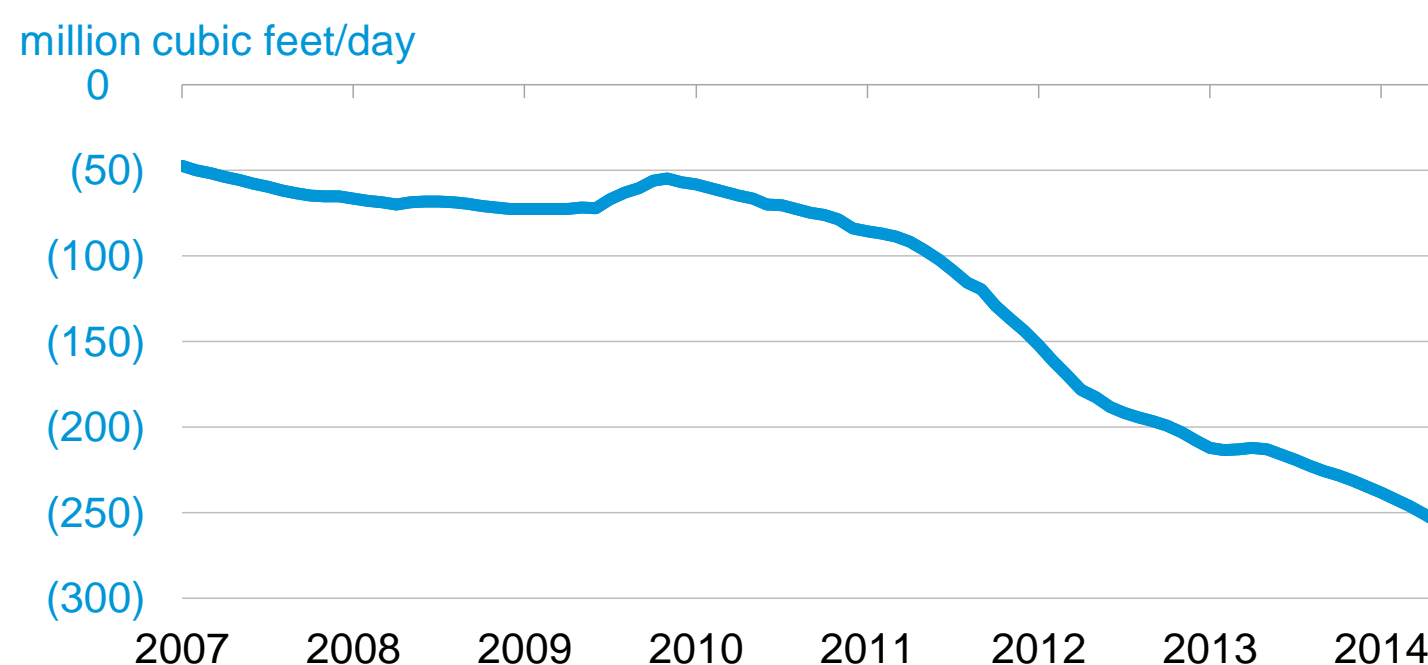
Eagle Ford
New-well gas production per rig



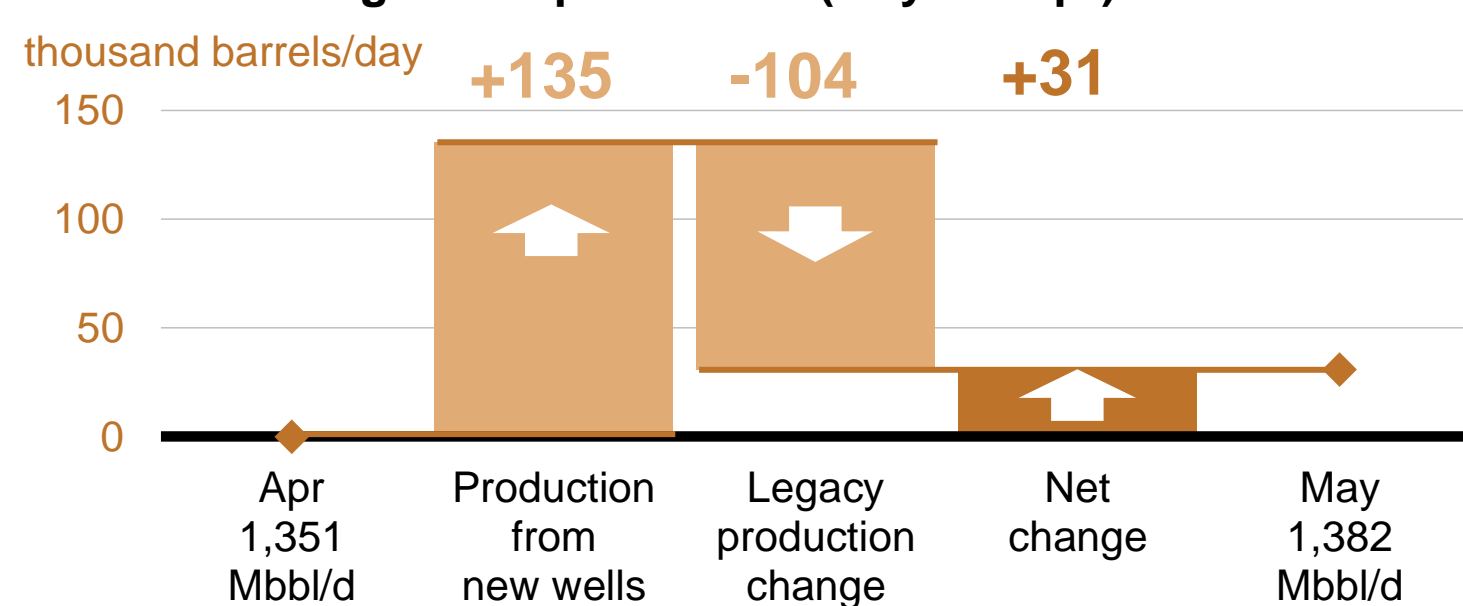
Eagle Ford
Legacy oil production change



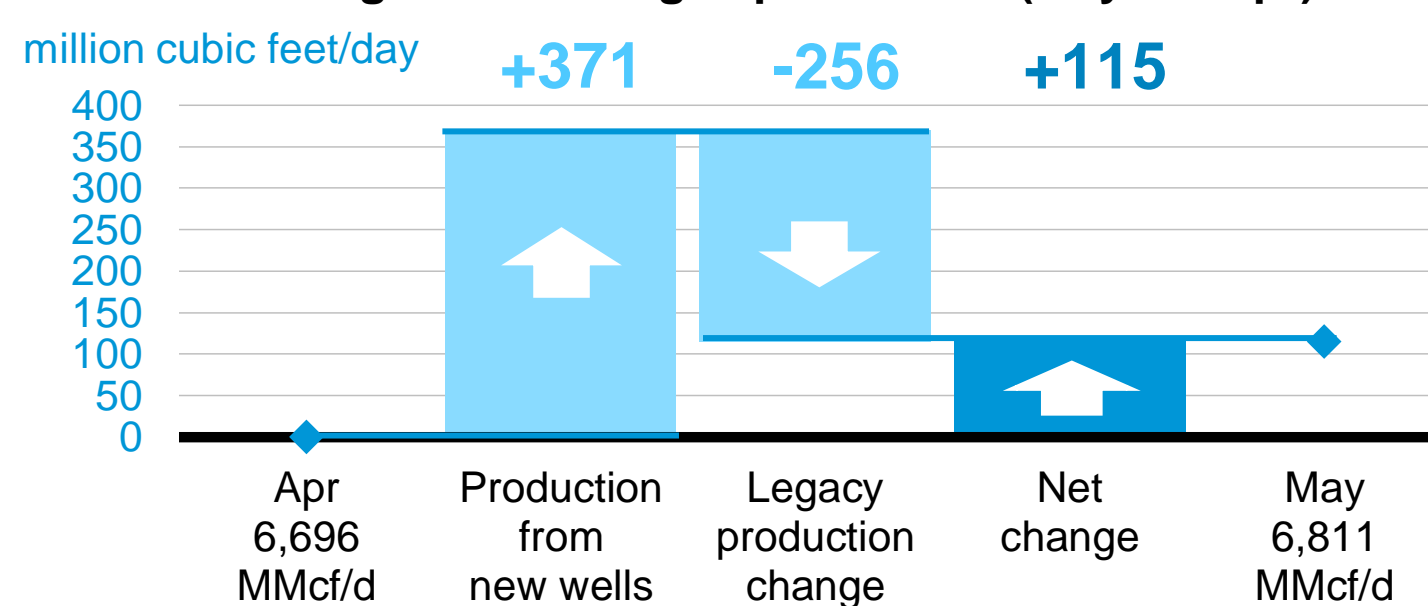
Eagle Ford
Legacy gas production change



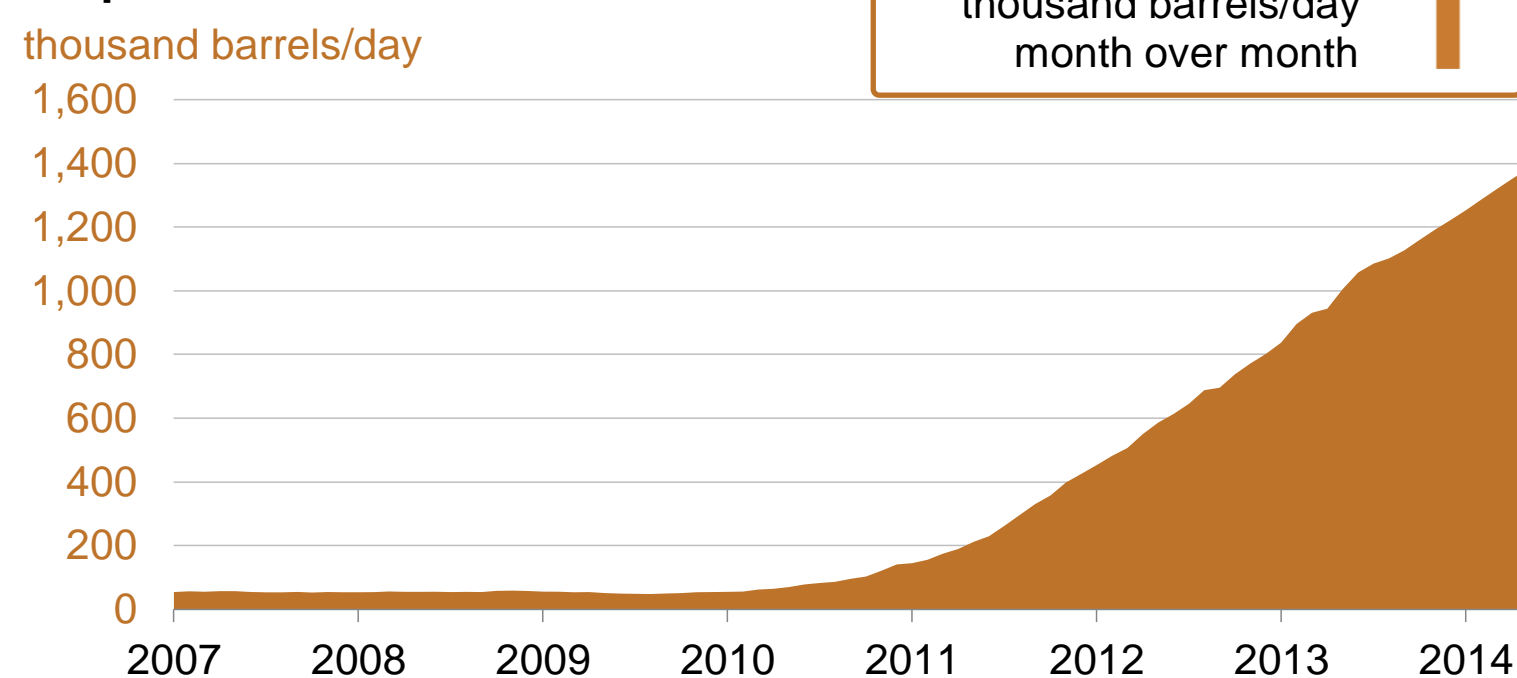
Eagle Ford
Indicated change in oil production (May vs. Apr)



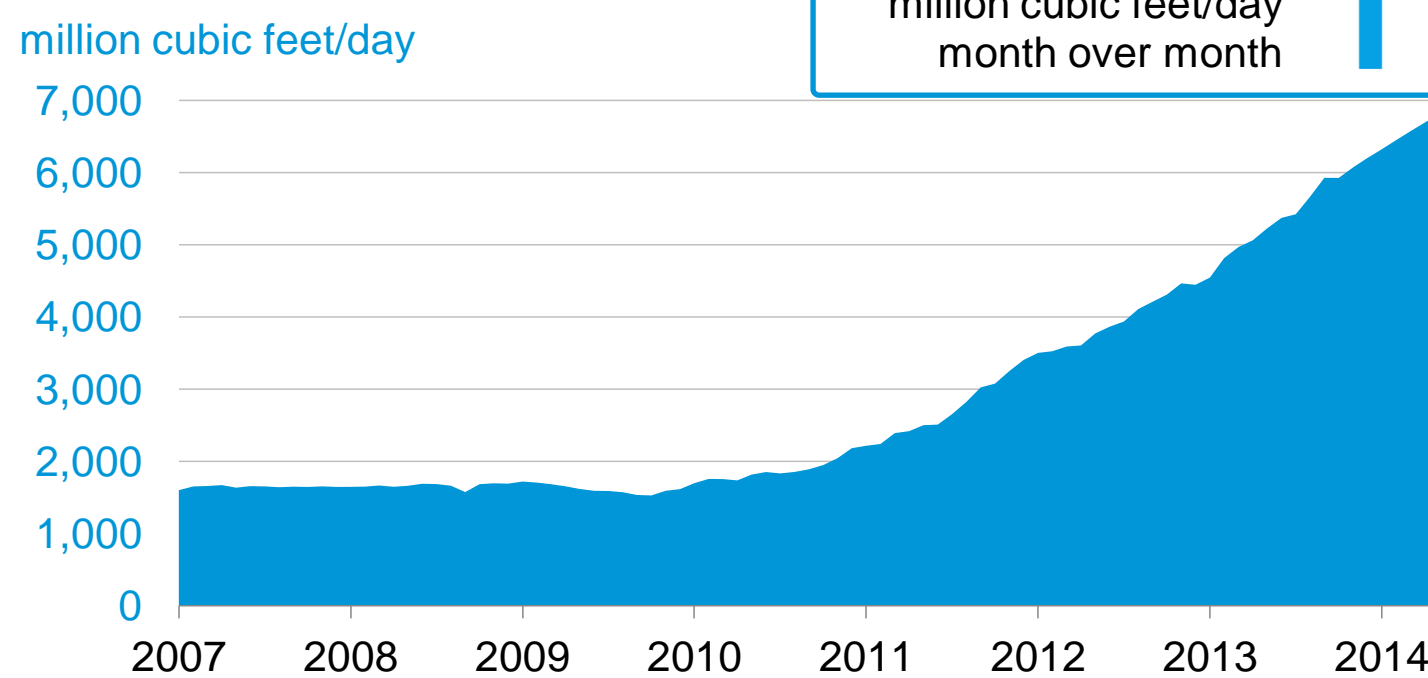
Eagle Ford
Indicated change in natural gas production (May vs. Apr)



Eagle Ford
Oil production



Eagle Ford
Natural gas production



Oil
0
barrels/day
month over month

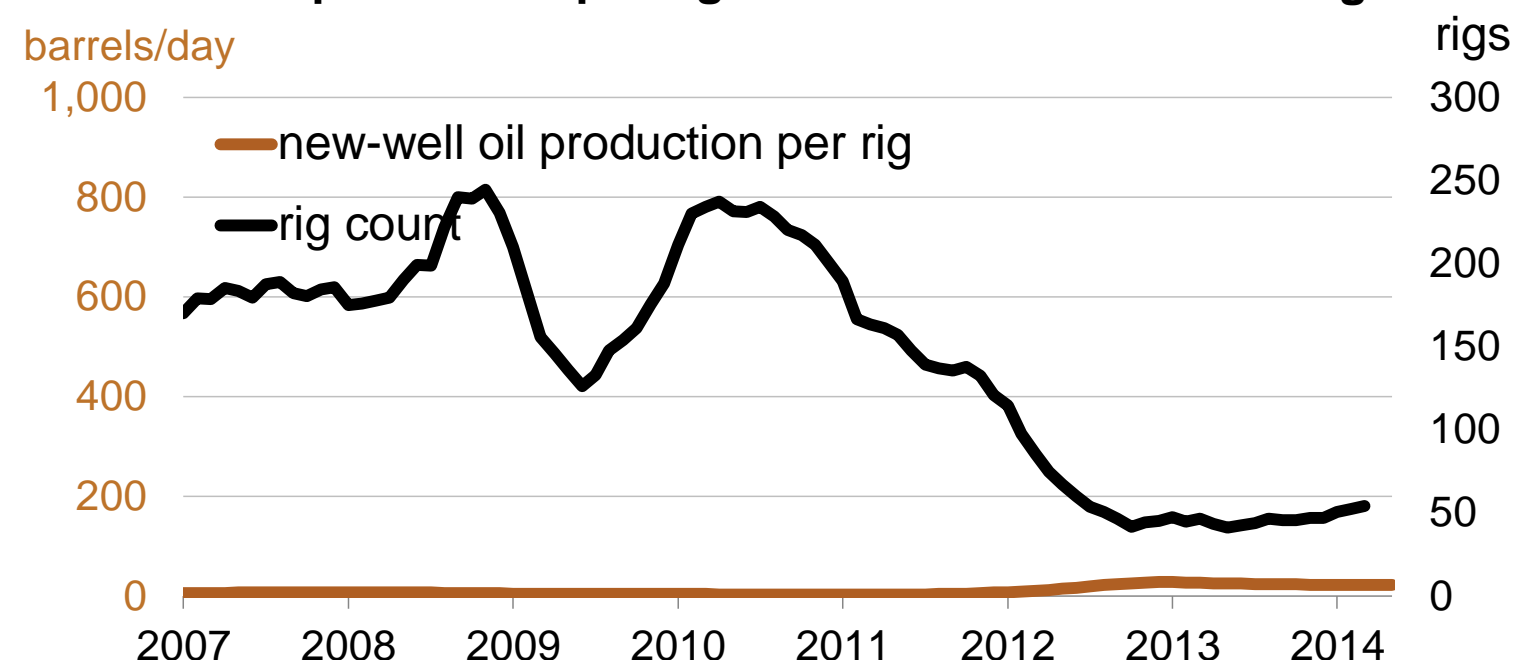
23 May
23 April
barrels/day

Monthly
additions
from one
average rig

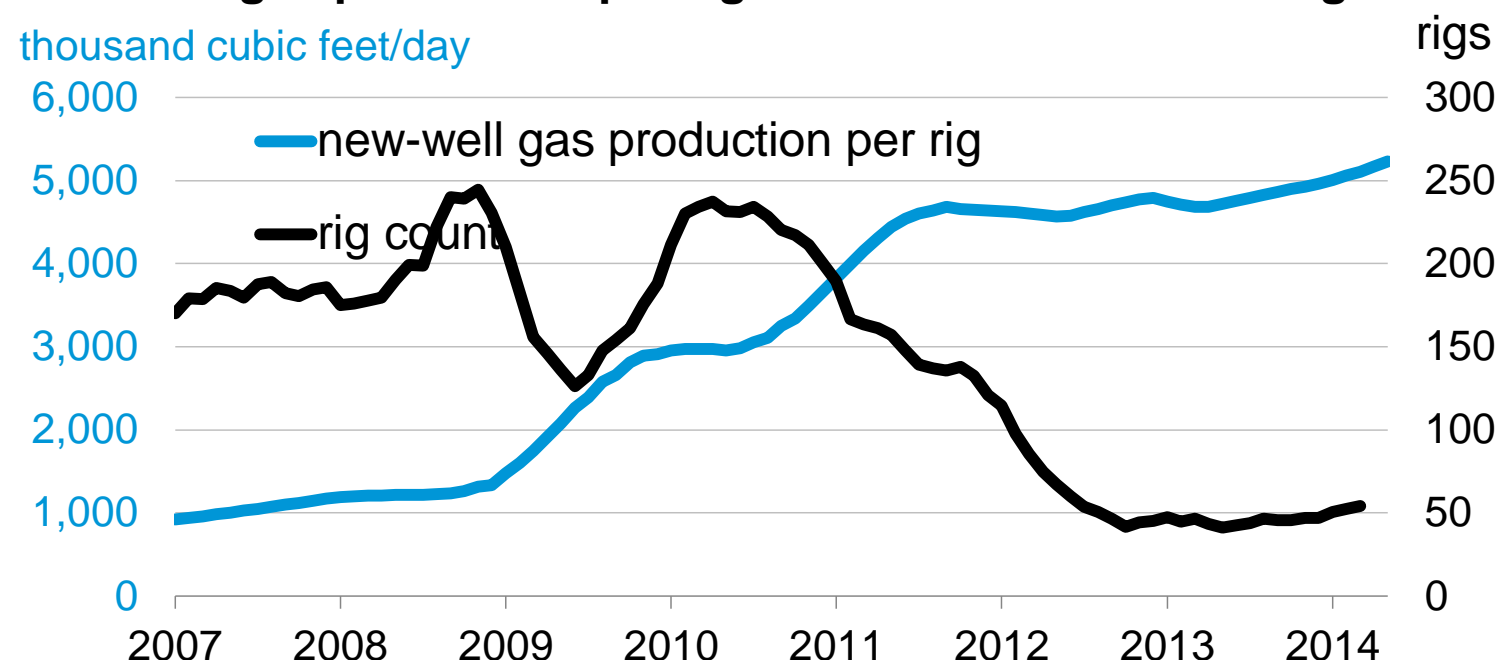
May **5,230**
April **5,168**
thousand cubic feet/day

Gas
+62
thousand cubic feet/day
month over month

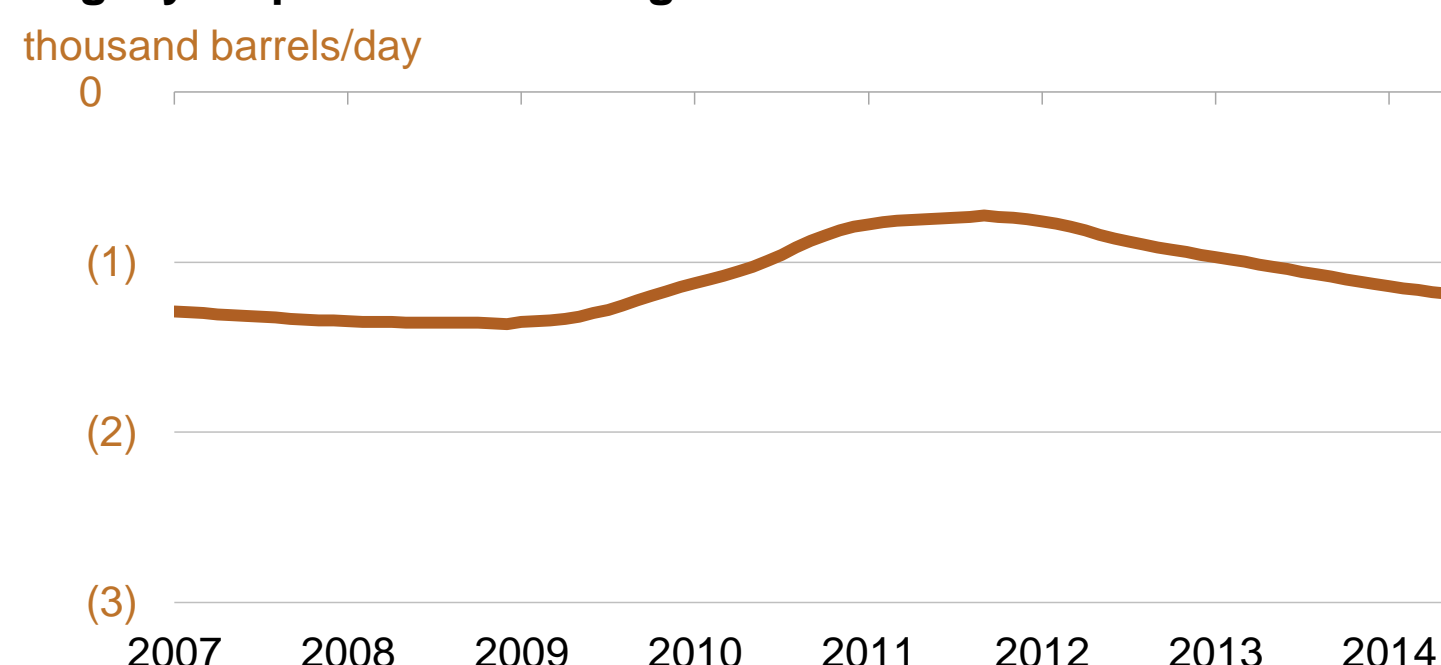
Haynesville
New-well oil production per rig



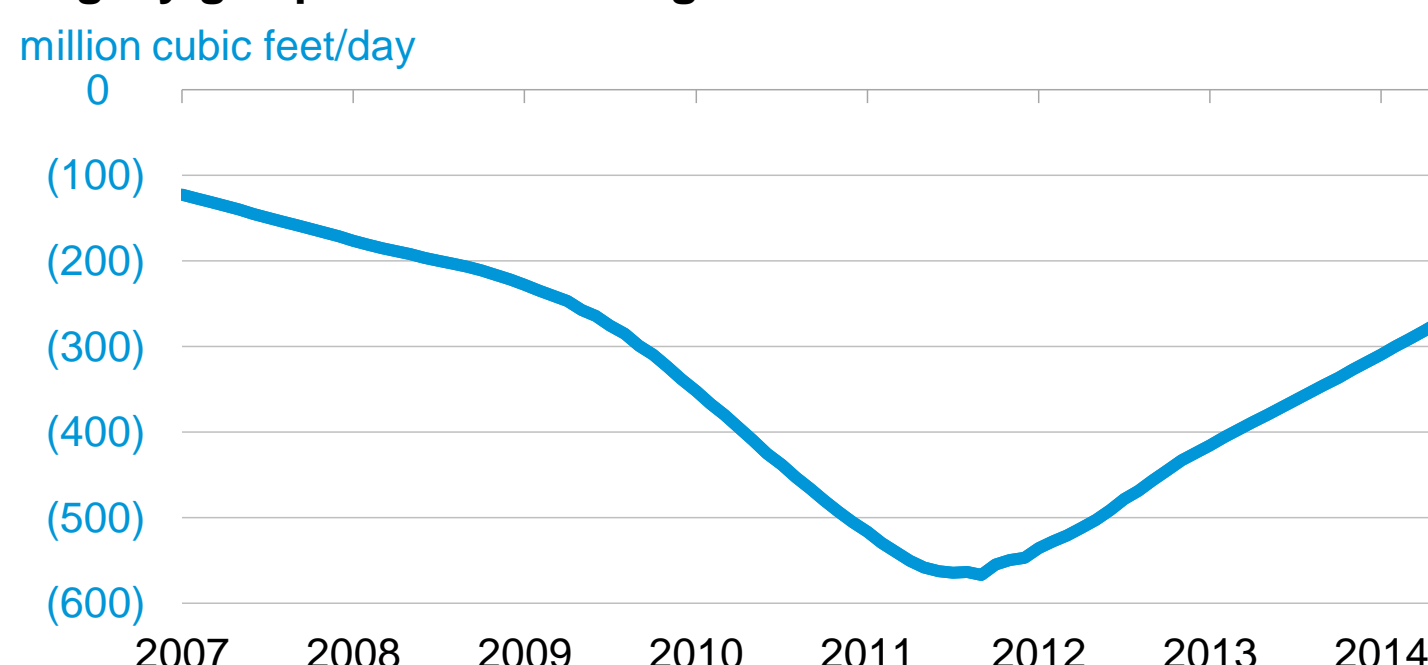
Haynesville
New-well gas production per rig



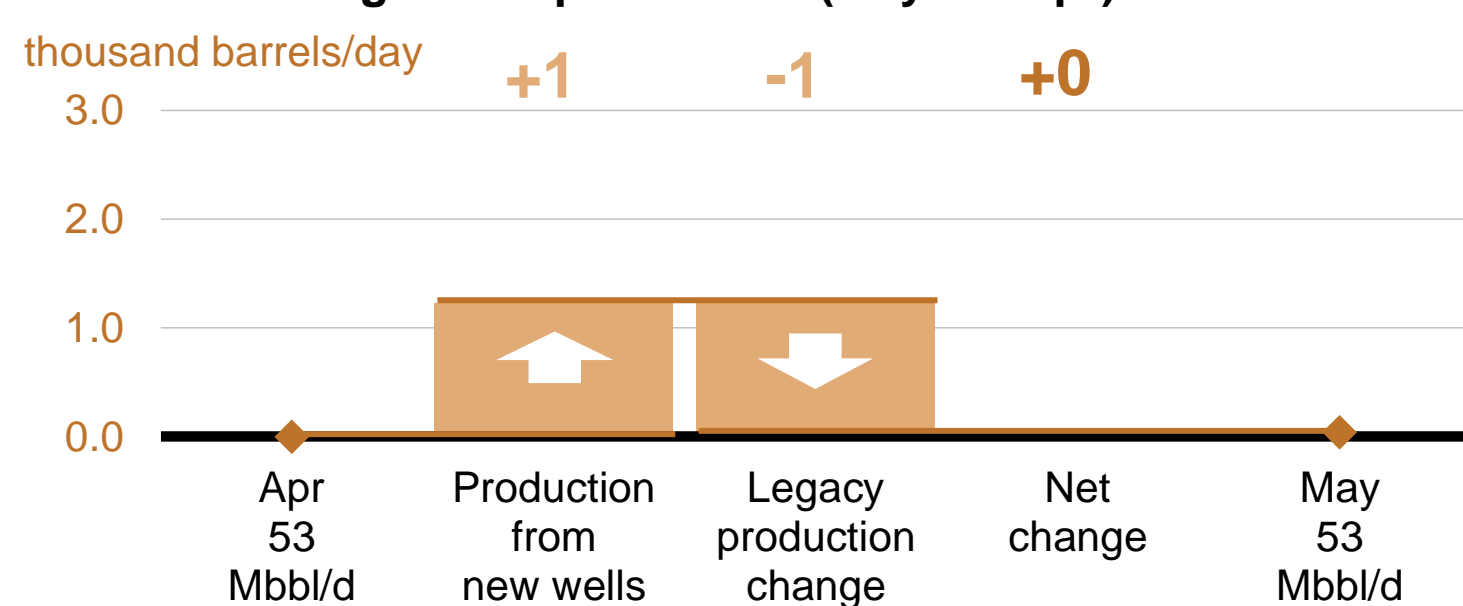
Haynesville
Legacy oil production change



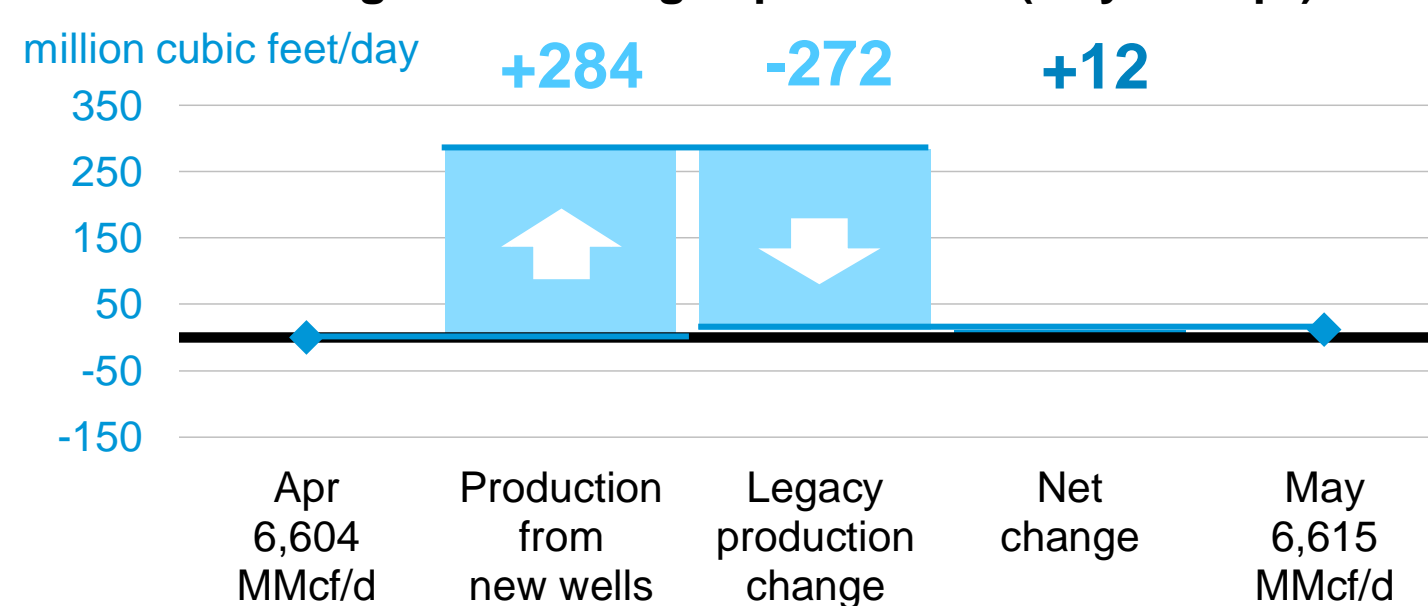
Haynesville
Legacy gas production change



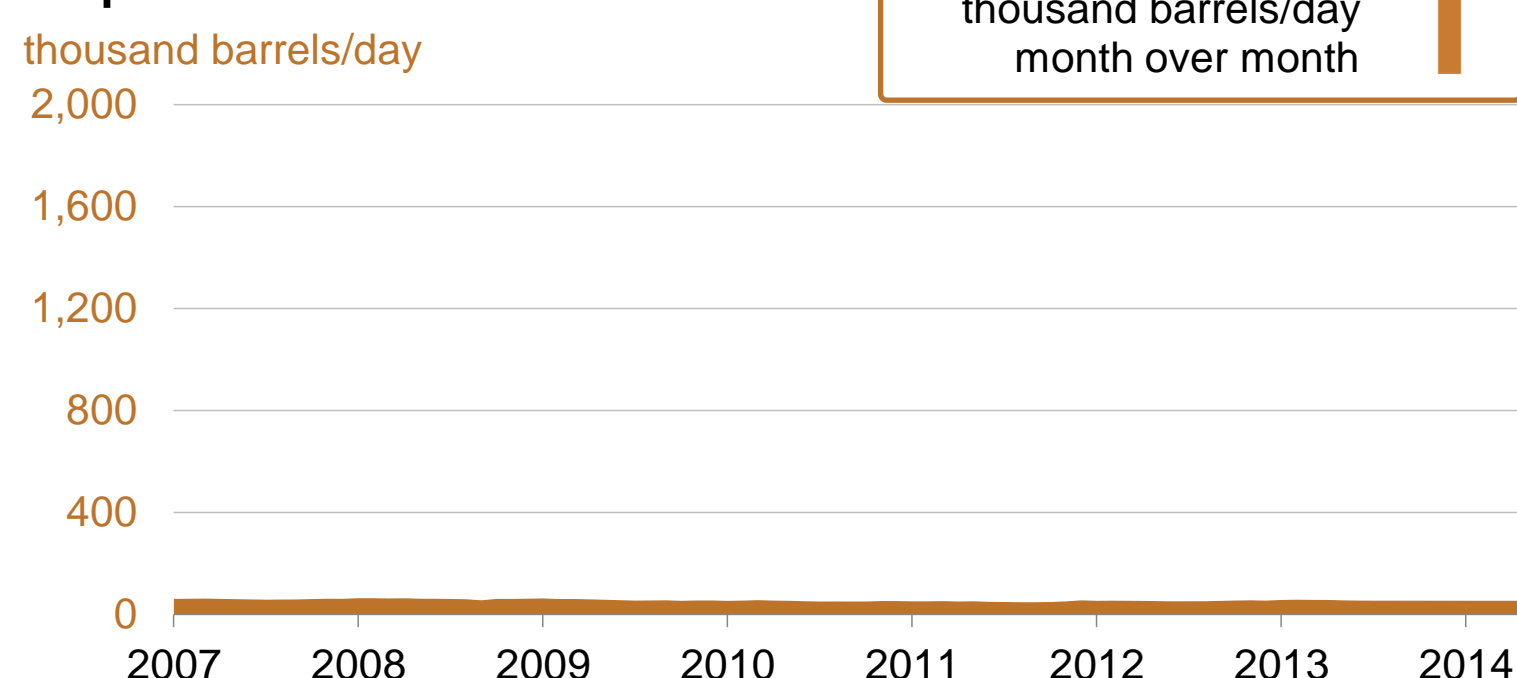
Haynesville
Indicated change in oil production (May vs. Apr)



Haynesville
Indicated change in natural gas production (May vs. Apr)

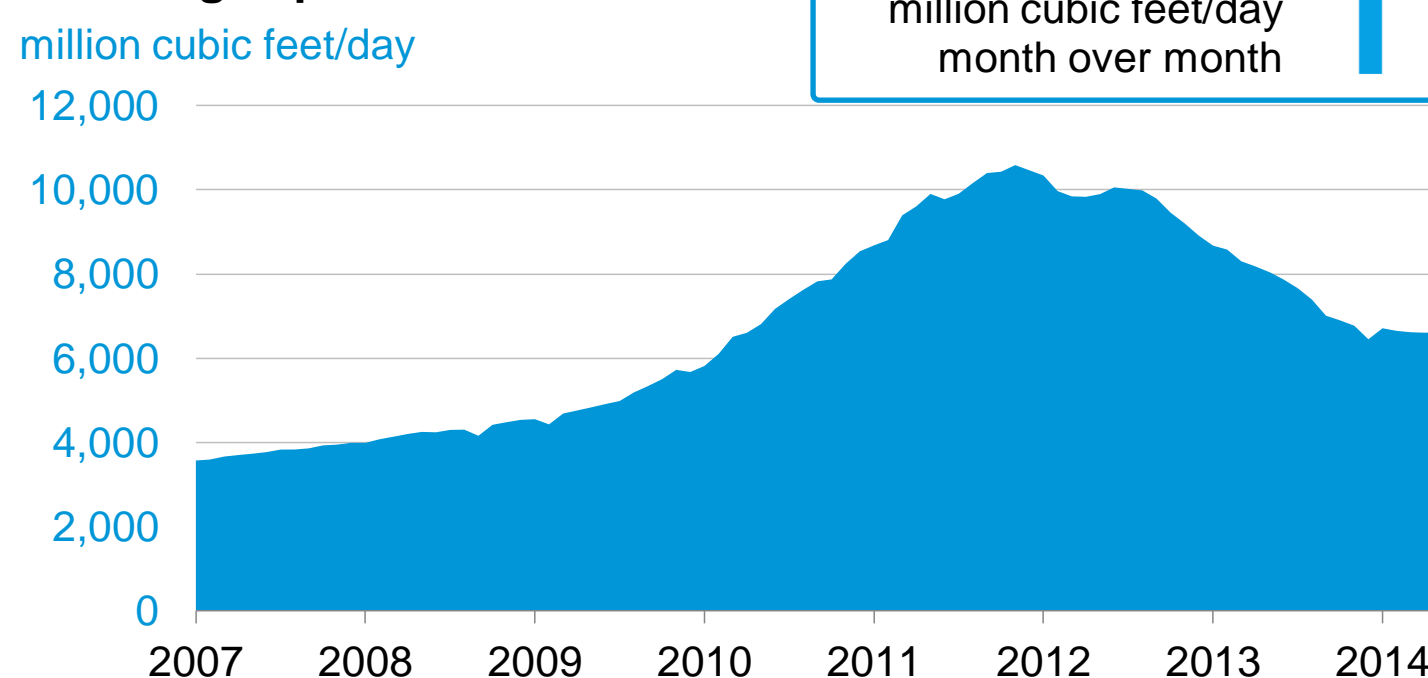


Haynesville
Oil production



Oil +0
thousand barrels/day
month over month

Haynesville
Natural gas production



Gas +12
million cubic feet/day
month over month

Oil
0
barrels/day
month over month

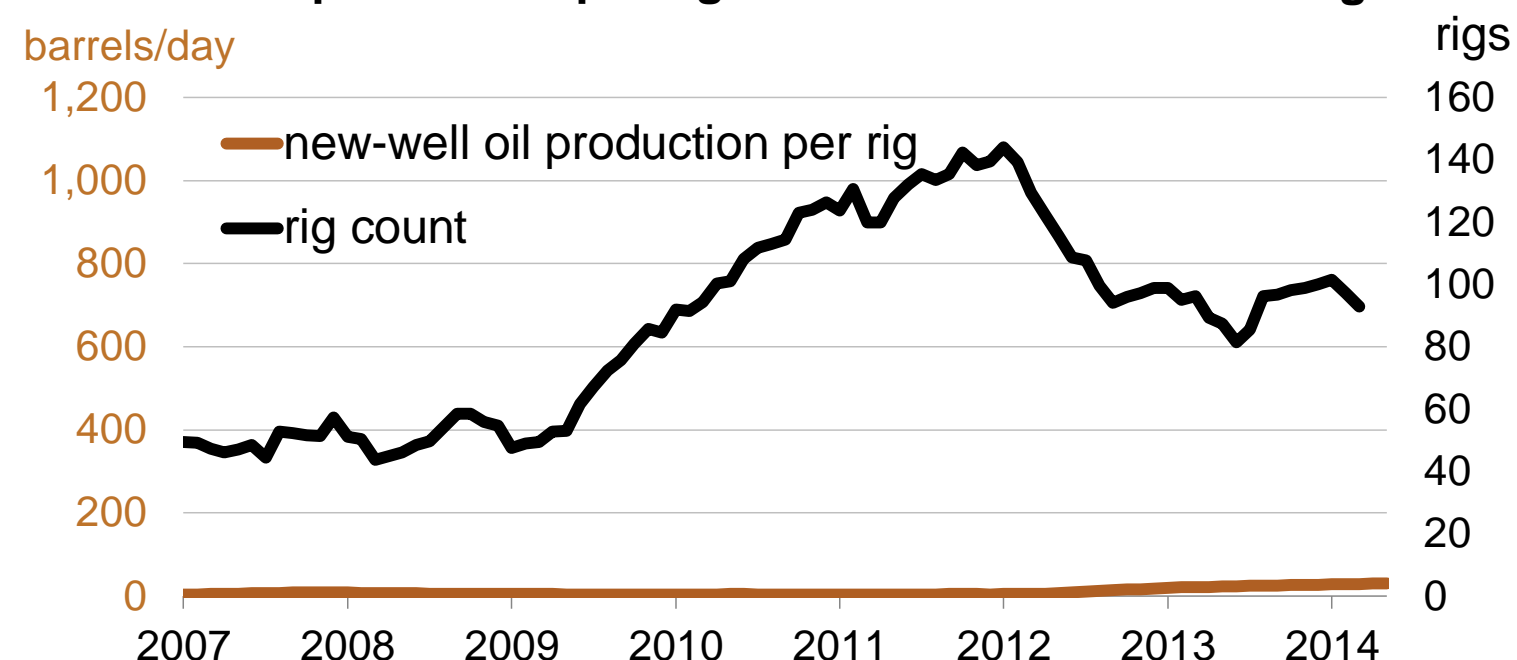
30 May
30 April
barrels/day

**Monthly
additions
from one
average rig**

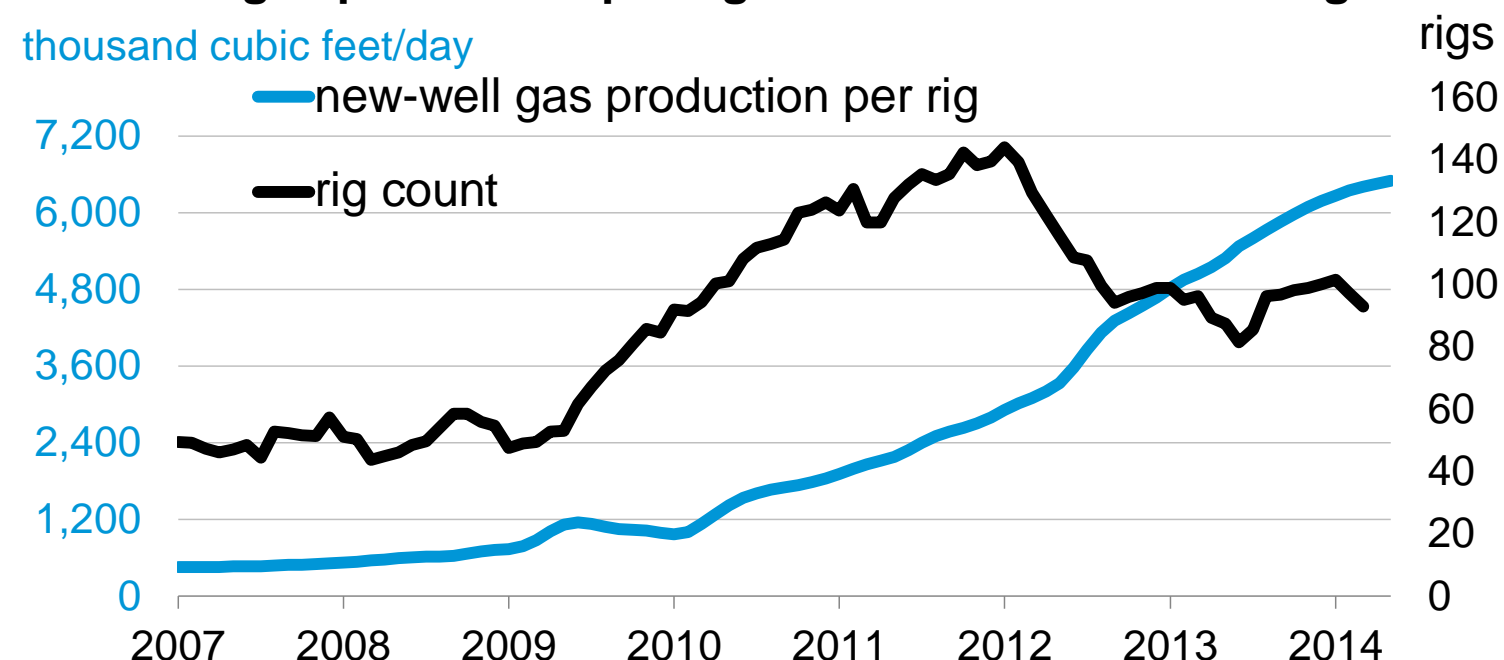
May **6,501**
April **6,455**
thousand cubic feet/day

Gas
+46
thousand cubic feet/day
month over month

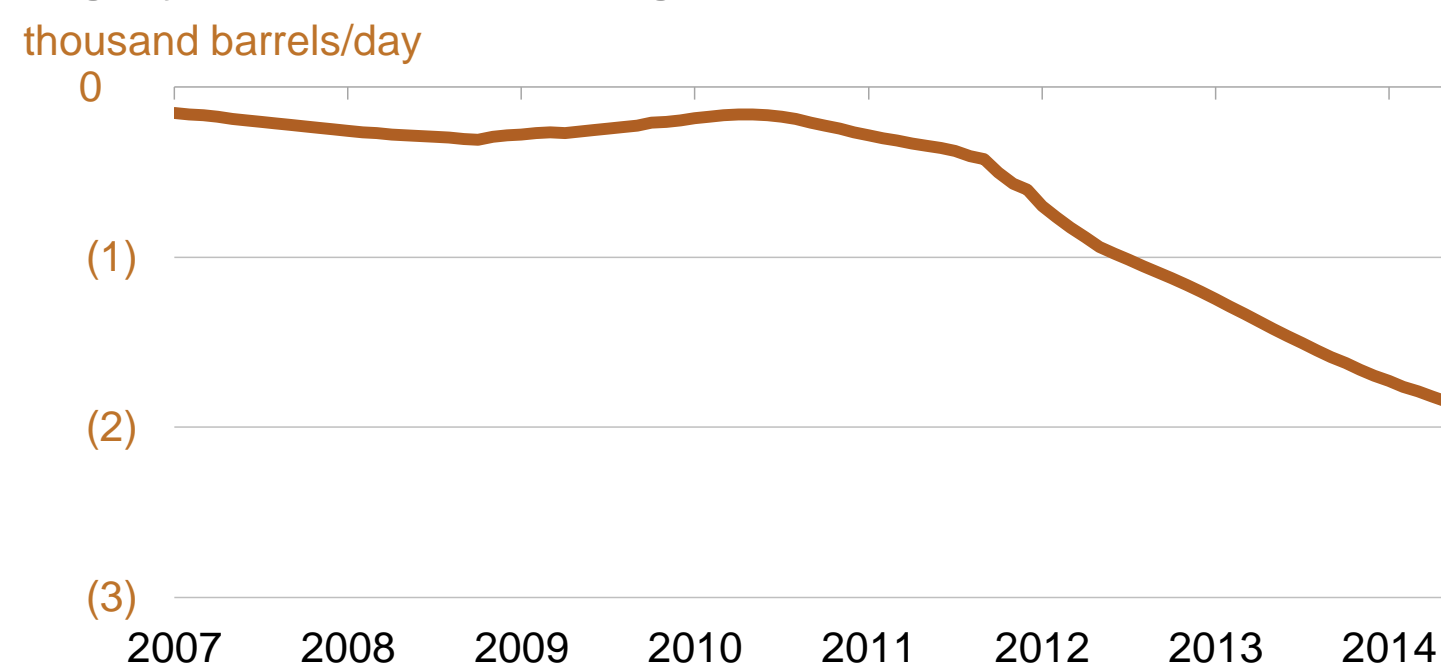
Marcellus
New-well oil production per rig



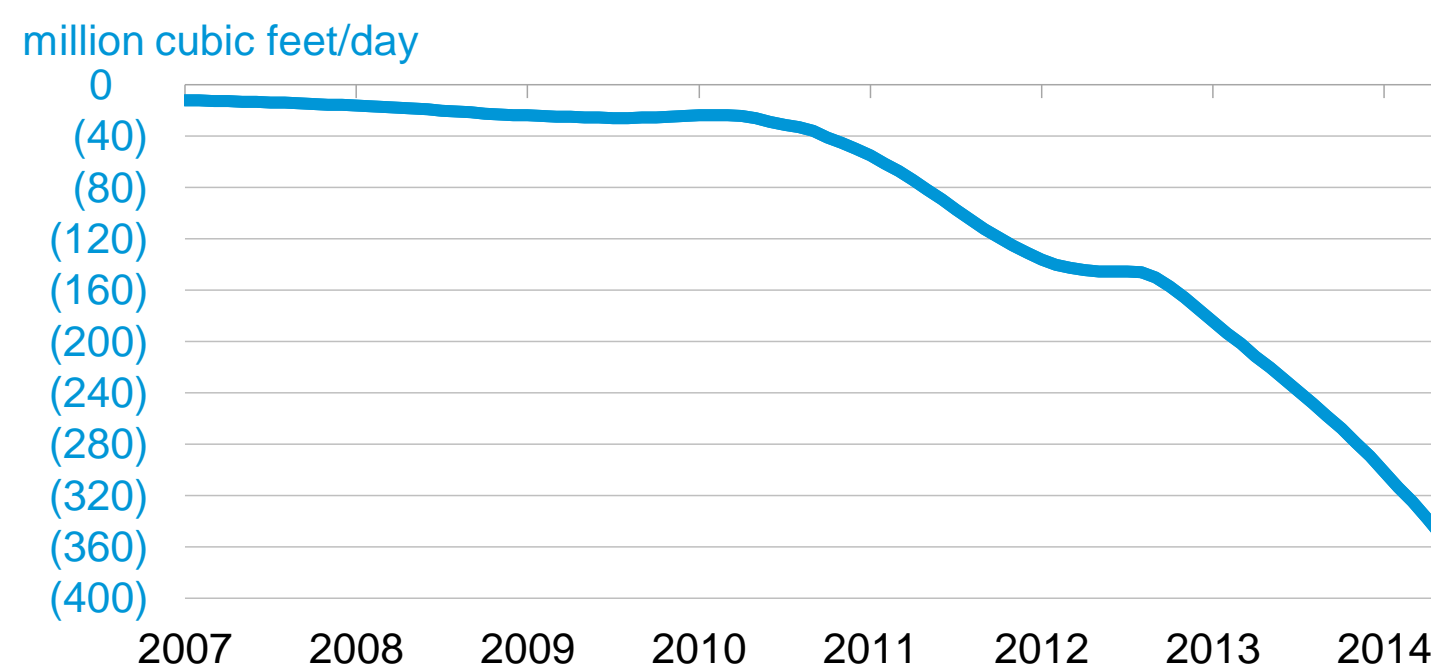
Marcellus
New-well gas production per rig



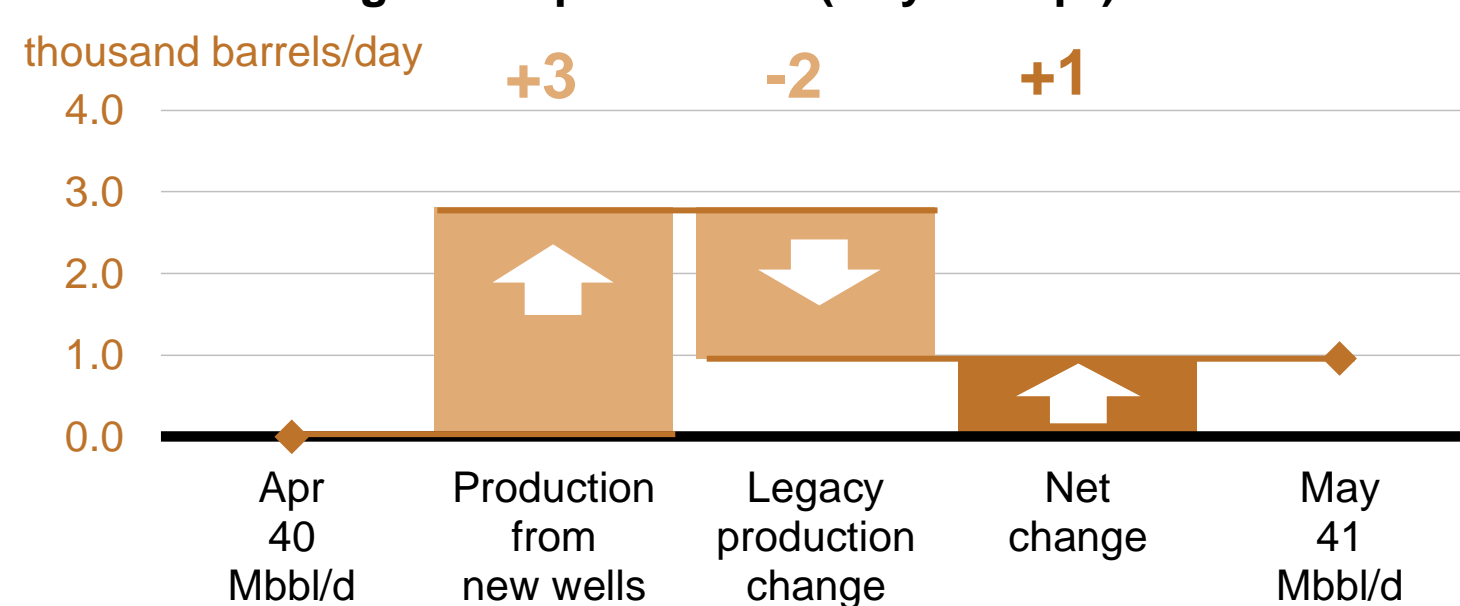
Marcellus
Legacy oil production change



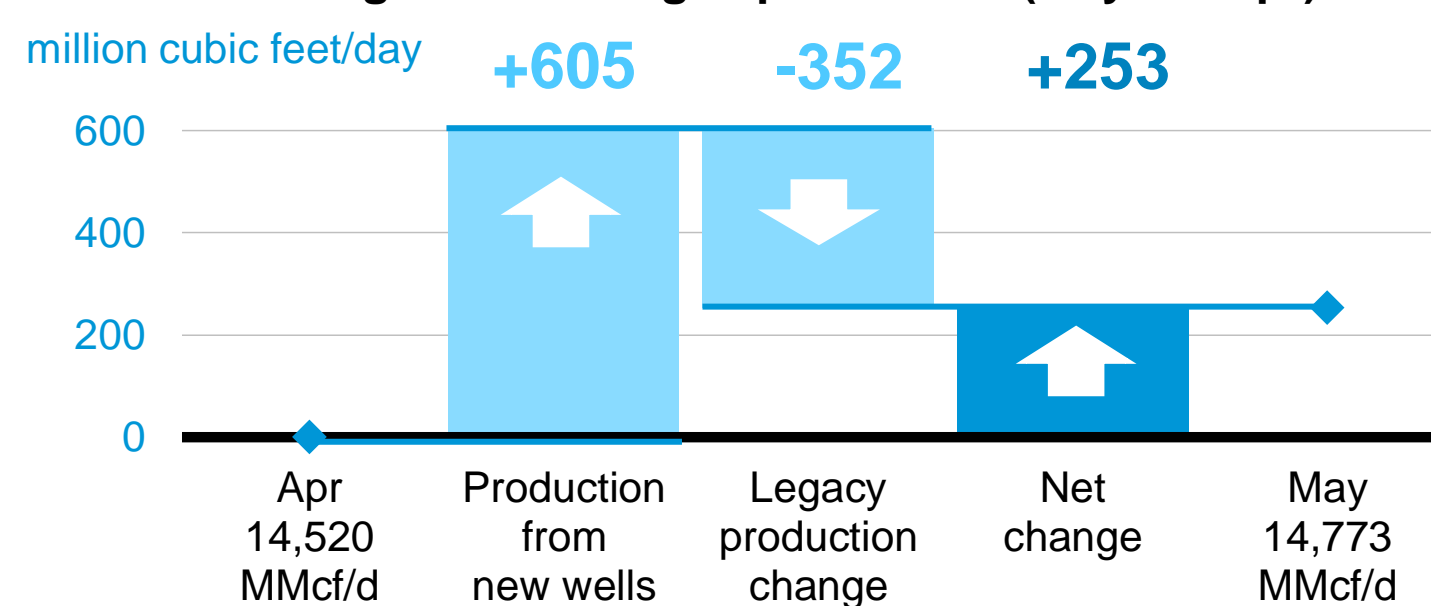
Marcellus
Legacy gas production change



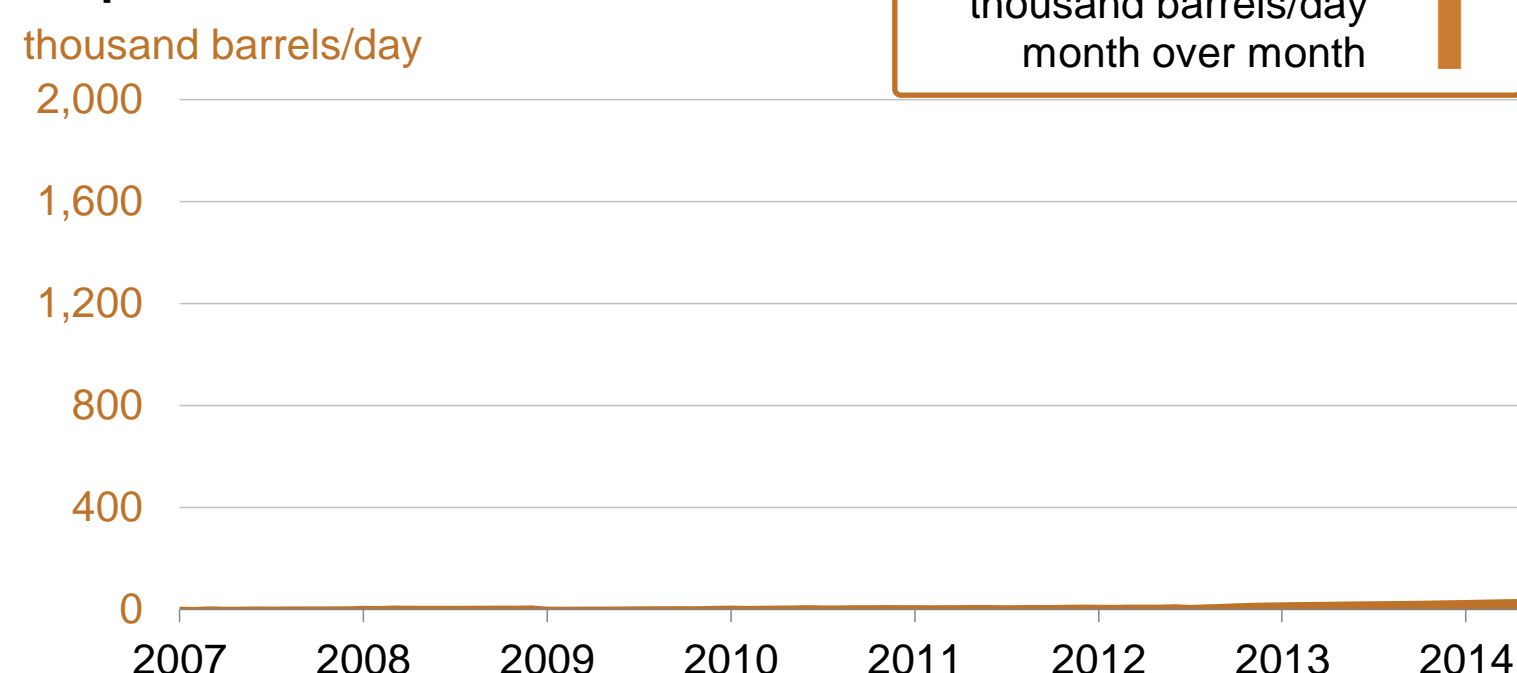
Marcellus
Indicated change in oil production (May vs. Apr)



Marcellus
Indicated change in natural gas production (May vs. Apr)

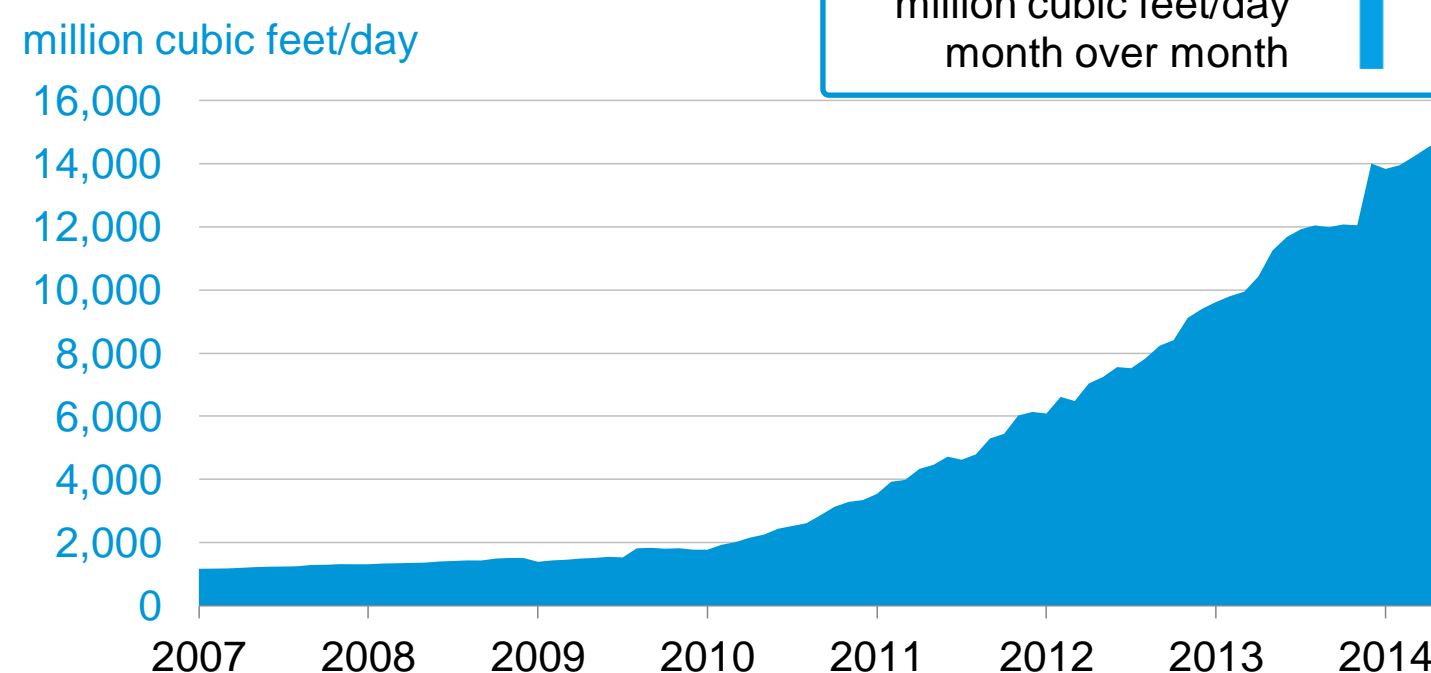


Marcellus
Oil production



Oil +1
thousand barrels/day
month over month

Marcellus
Natural gas production



Gas +253
million cubic feet/day
month over month

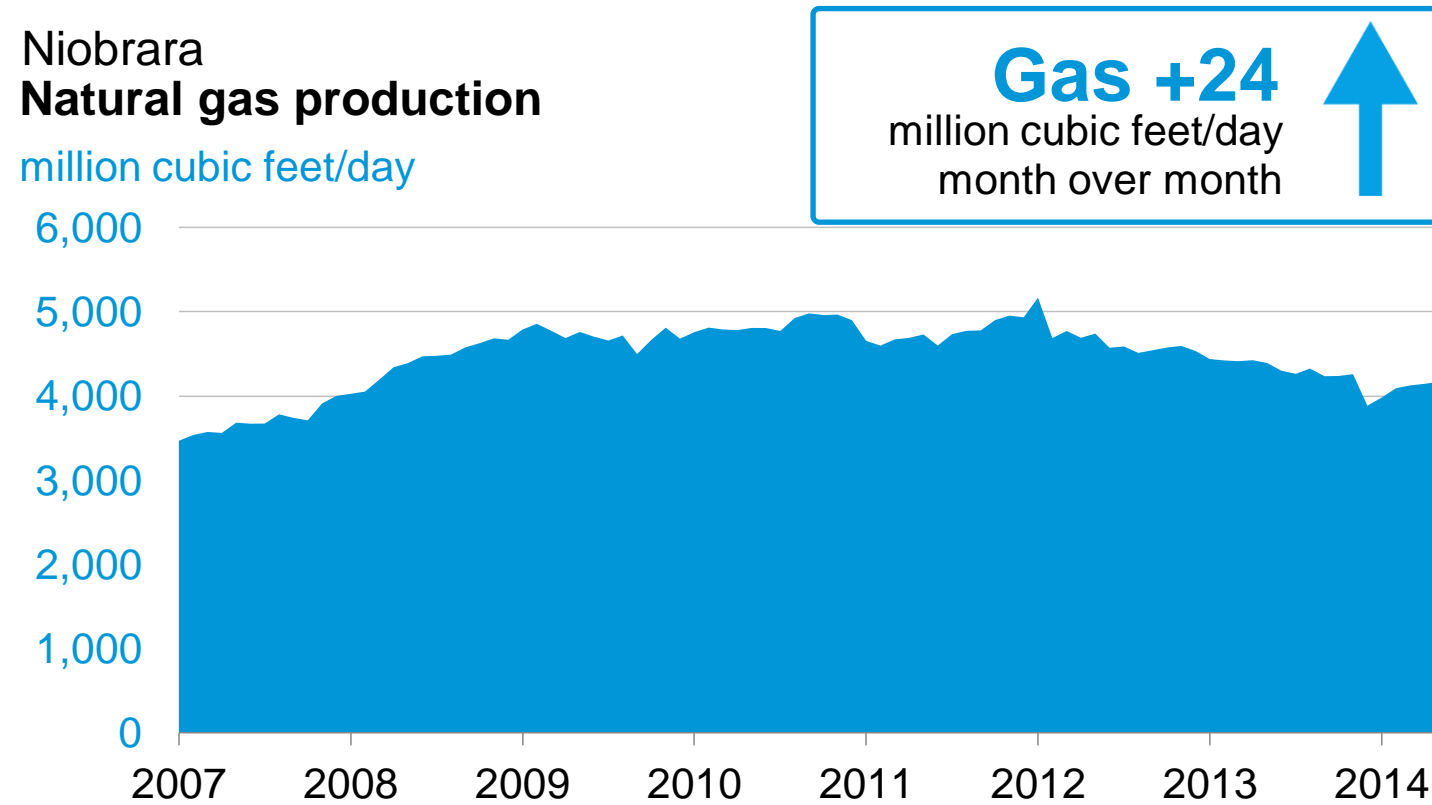
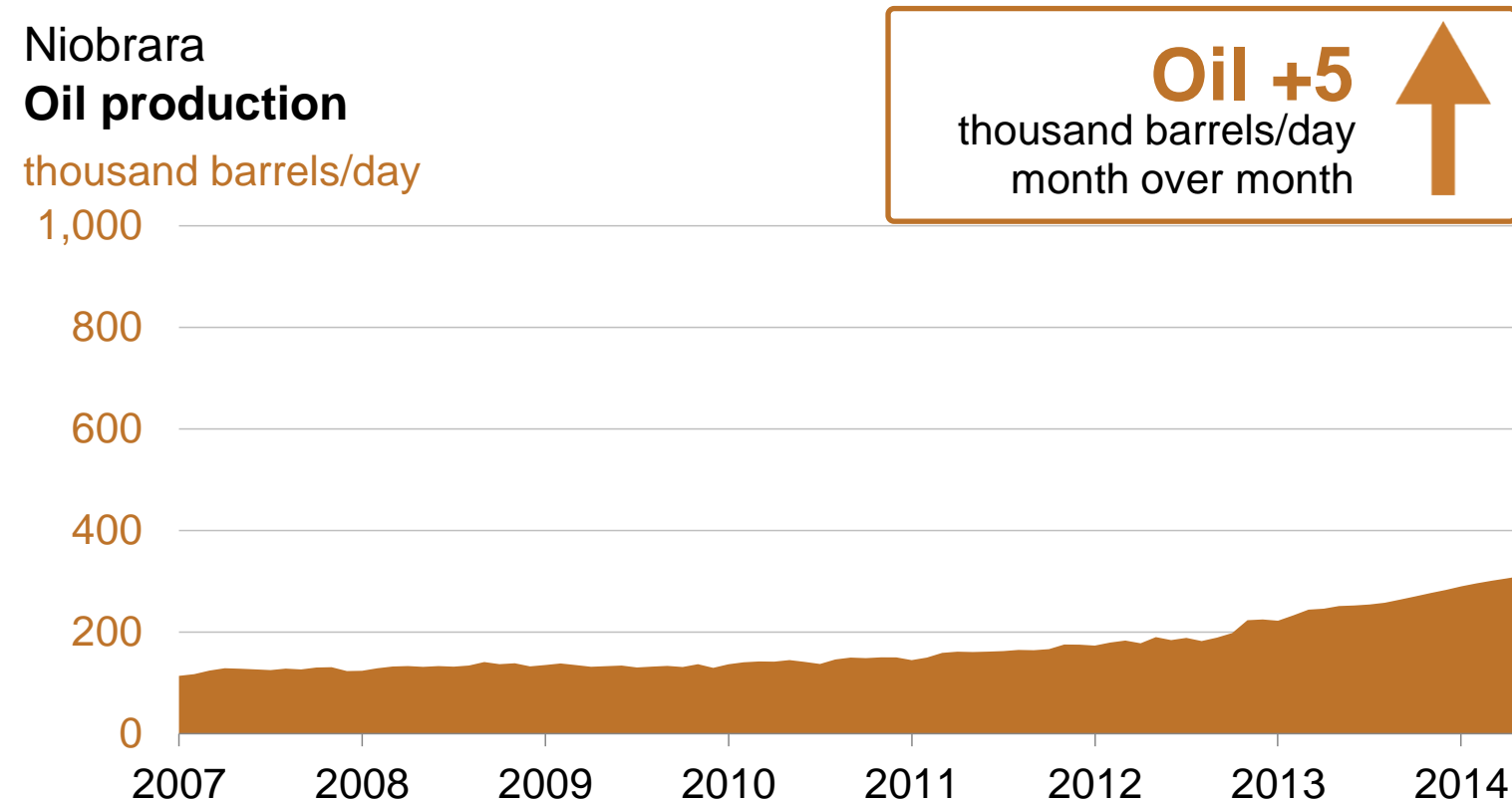
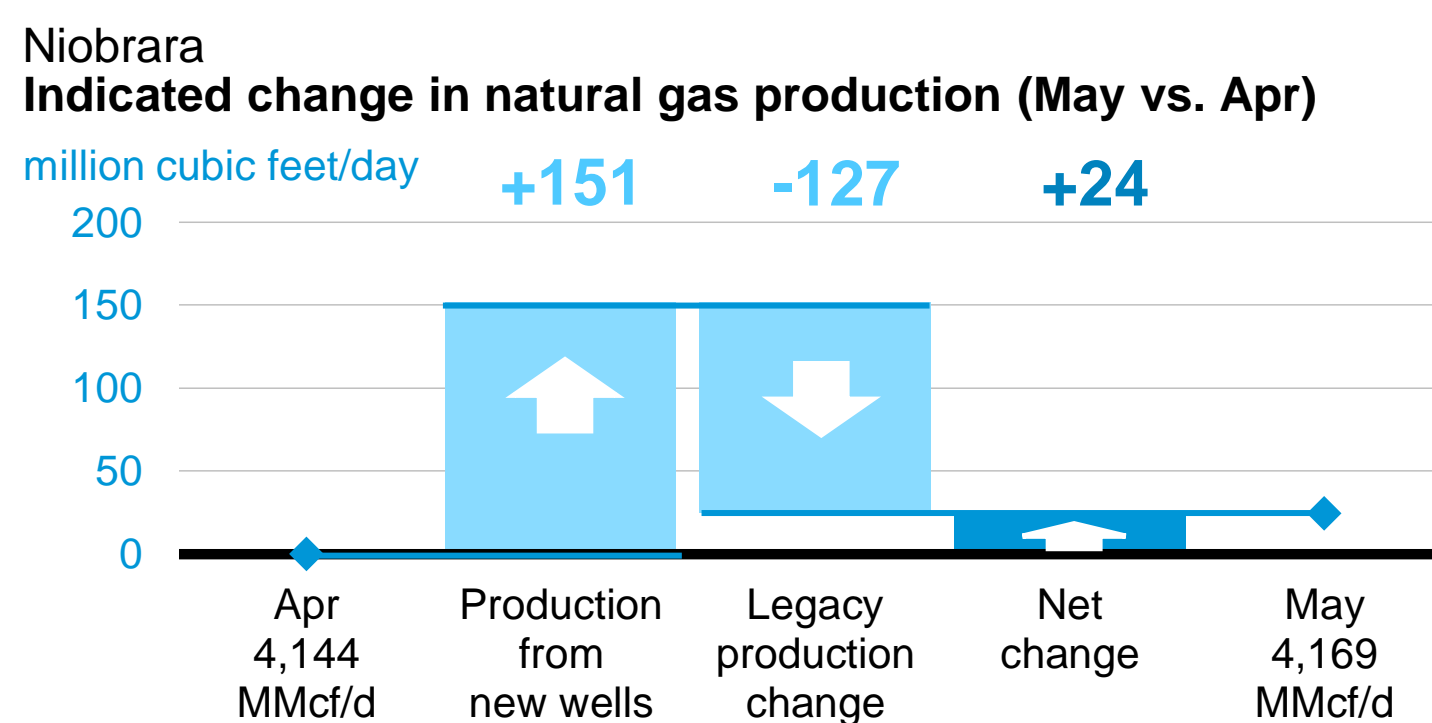
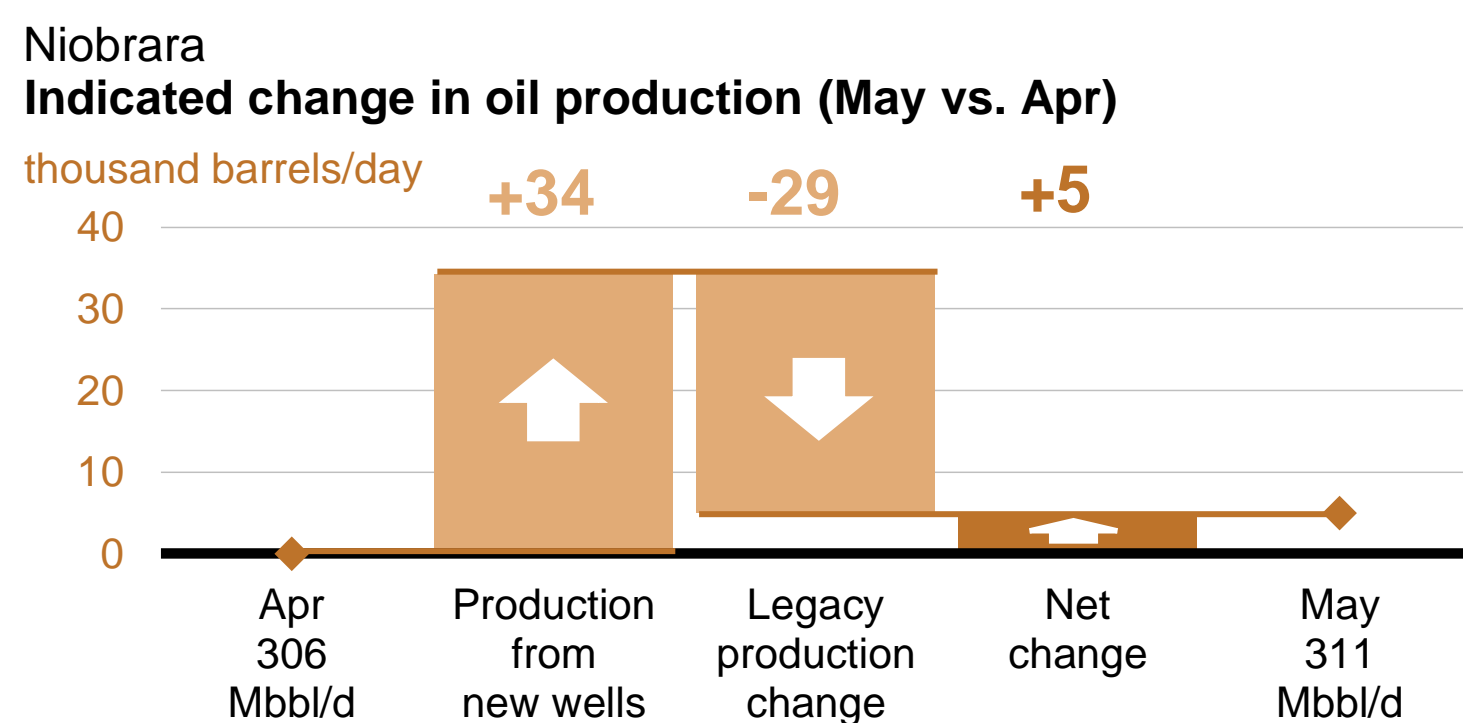
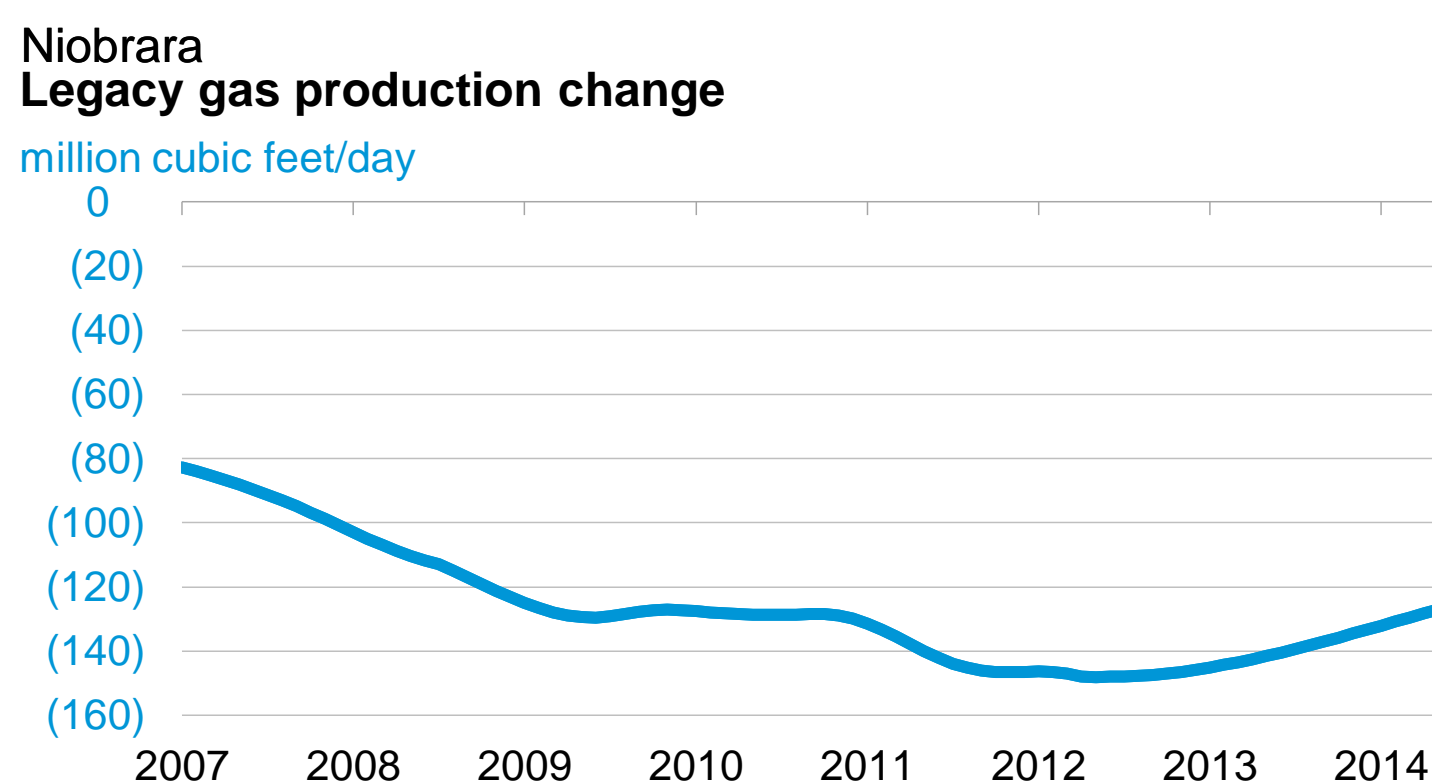
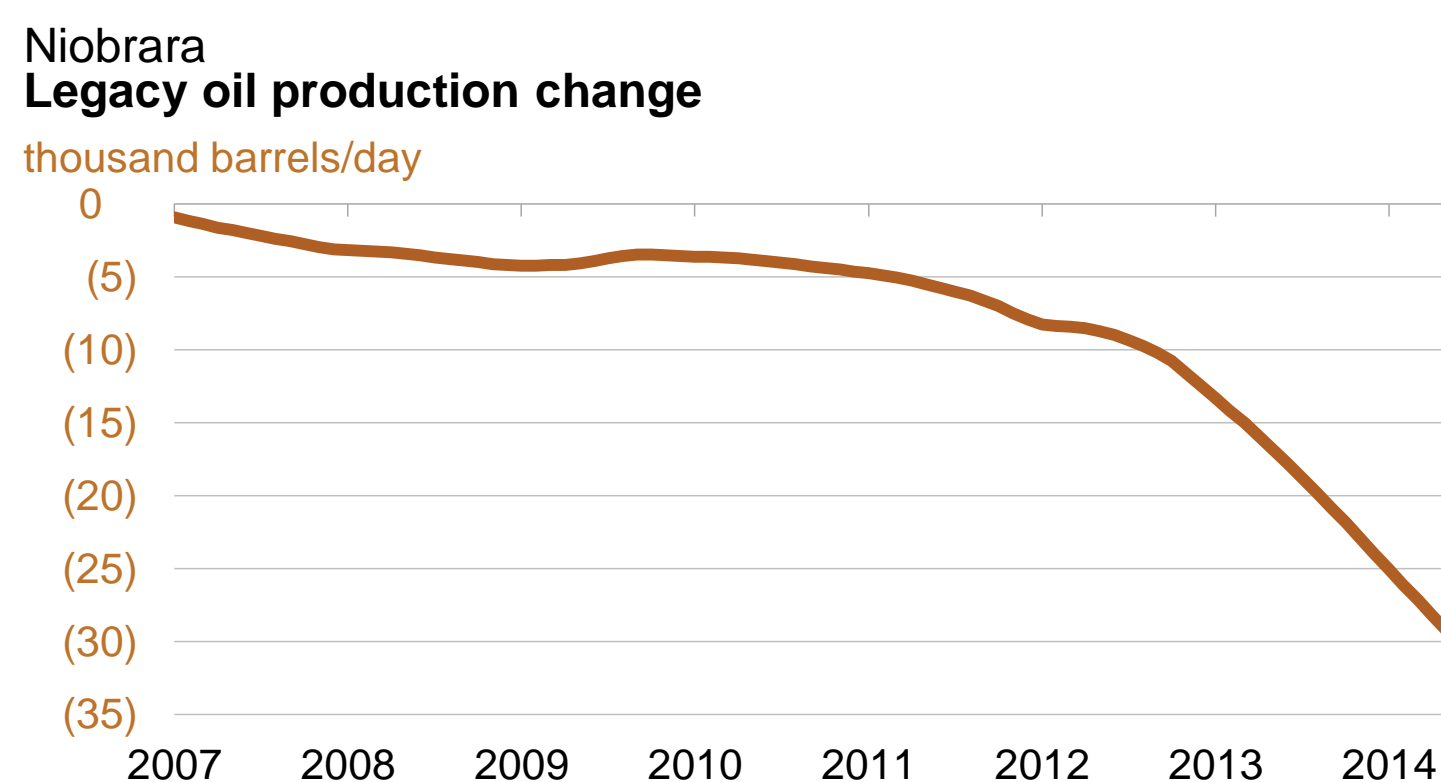
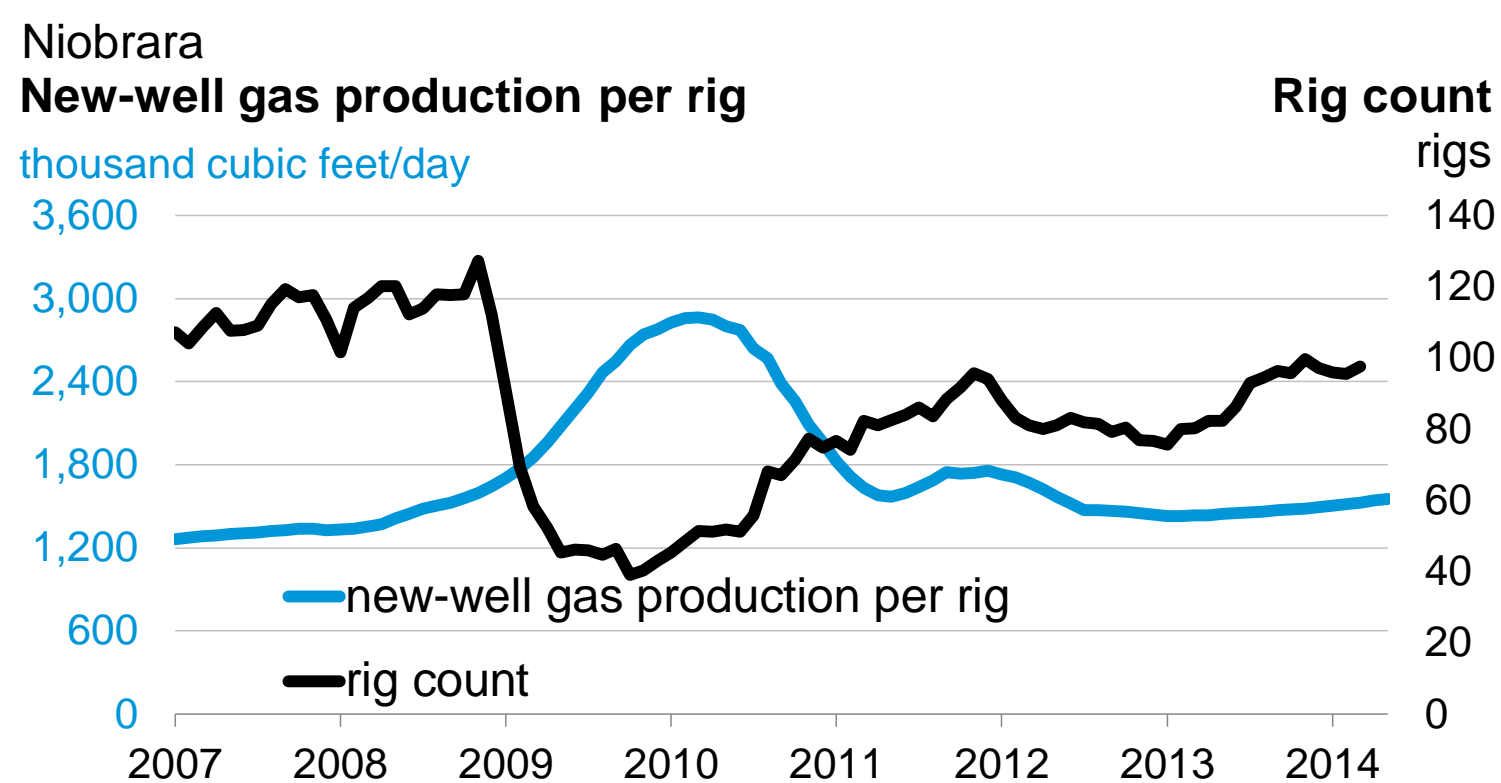
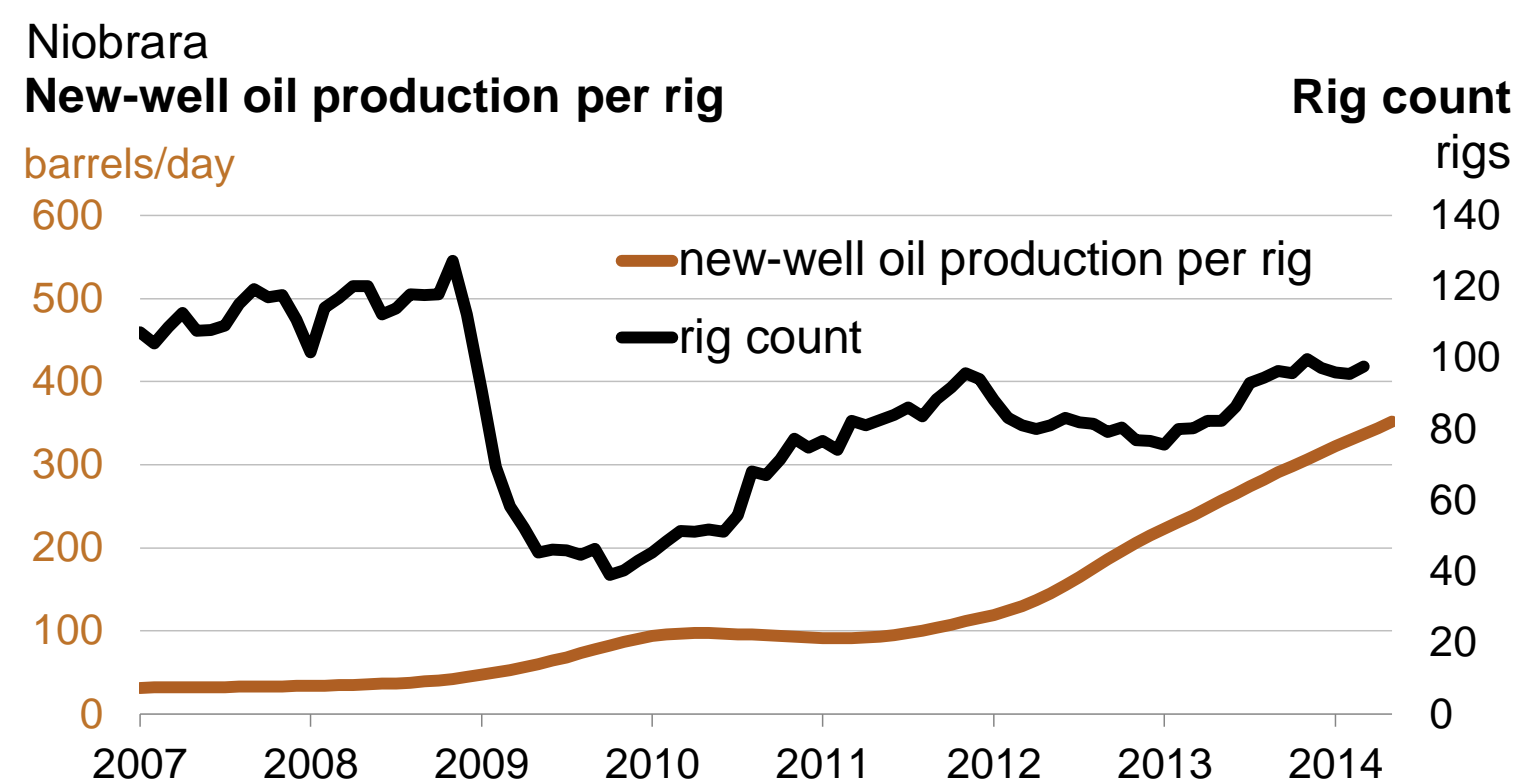
Oil
+8
barrels/day
month over month

352 May
344 April
barrels/day

**Monthly
additions
from one
average rig**

May **1,554**
April **1,540**
thousand cubic feet/day

Gas
+14
thousand cubic feet/day
month over month



Oil
+1
barrels/day
month over month

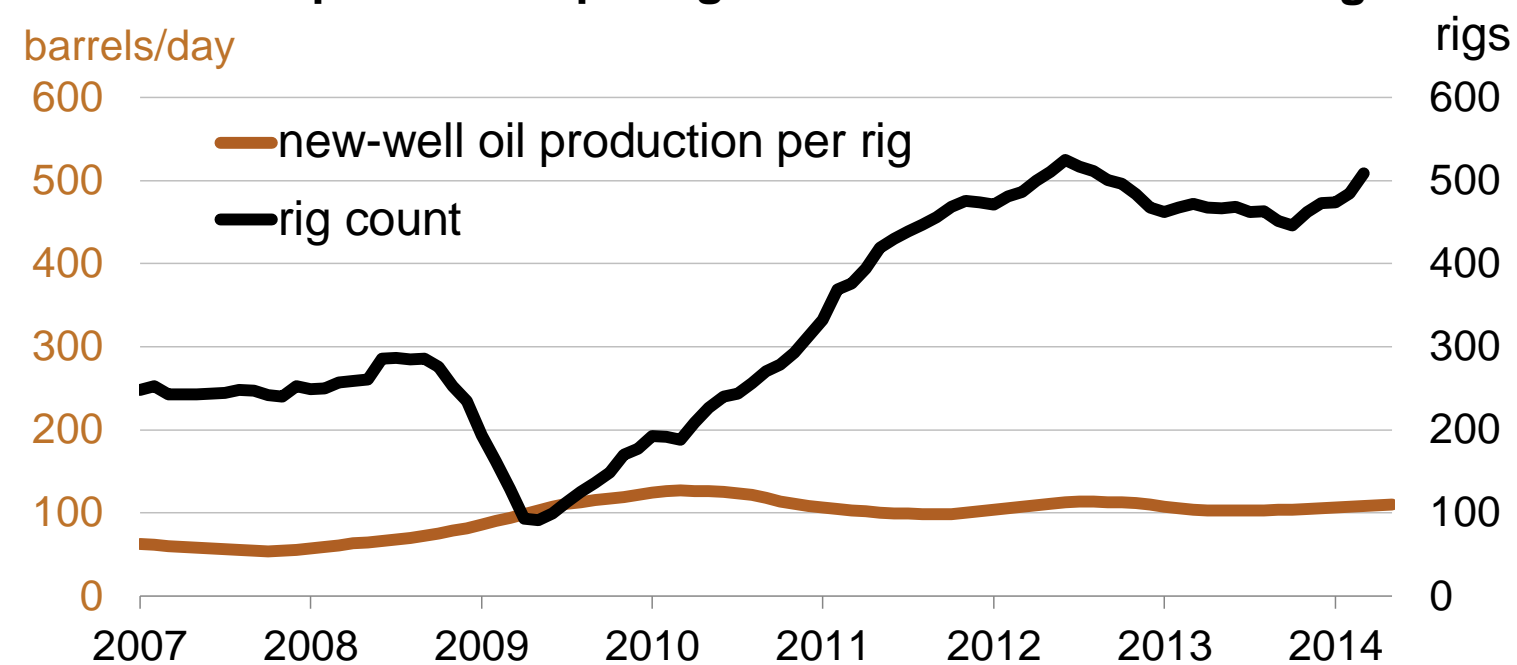
110 May
109 April
barrels/day

**Monthly
additions
from one
average rig**

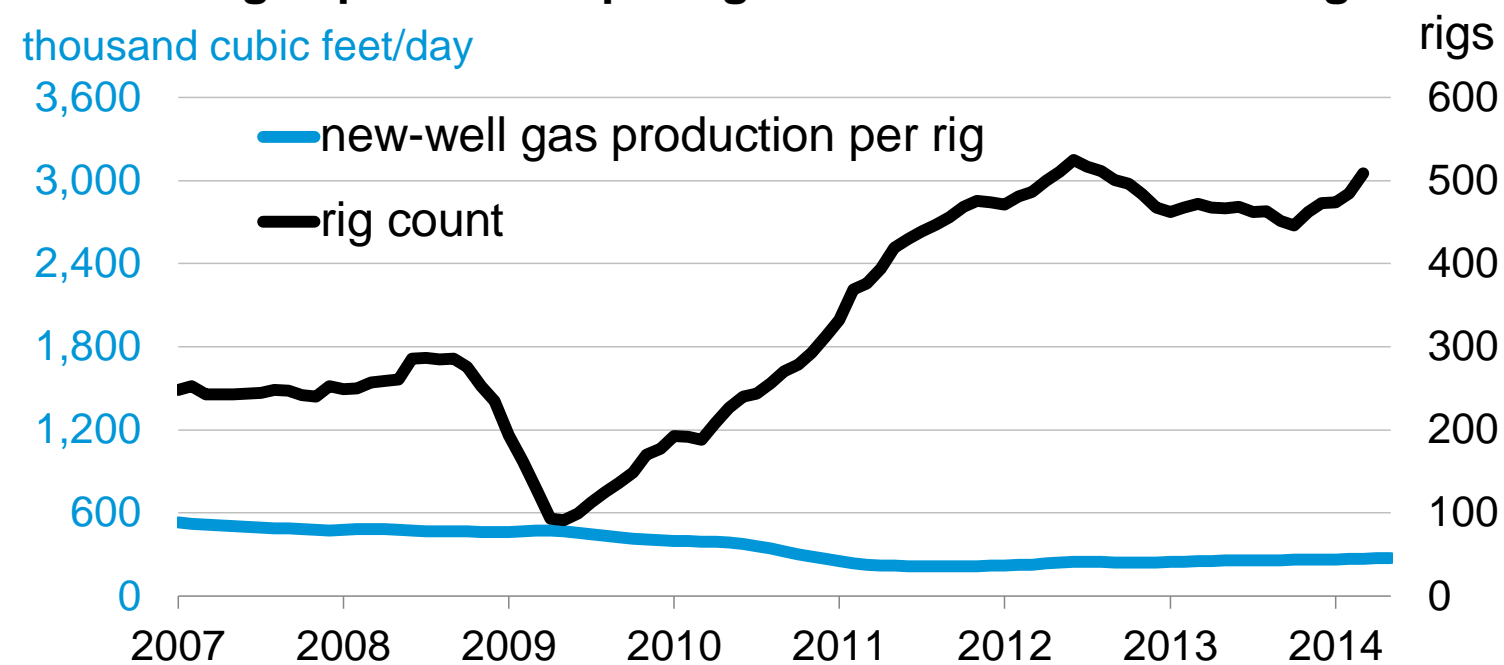
May **276**
April **273**
thousand cubic feet/day

Gas
+3
thousand cubic feet/day
month over month

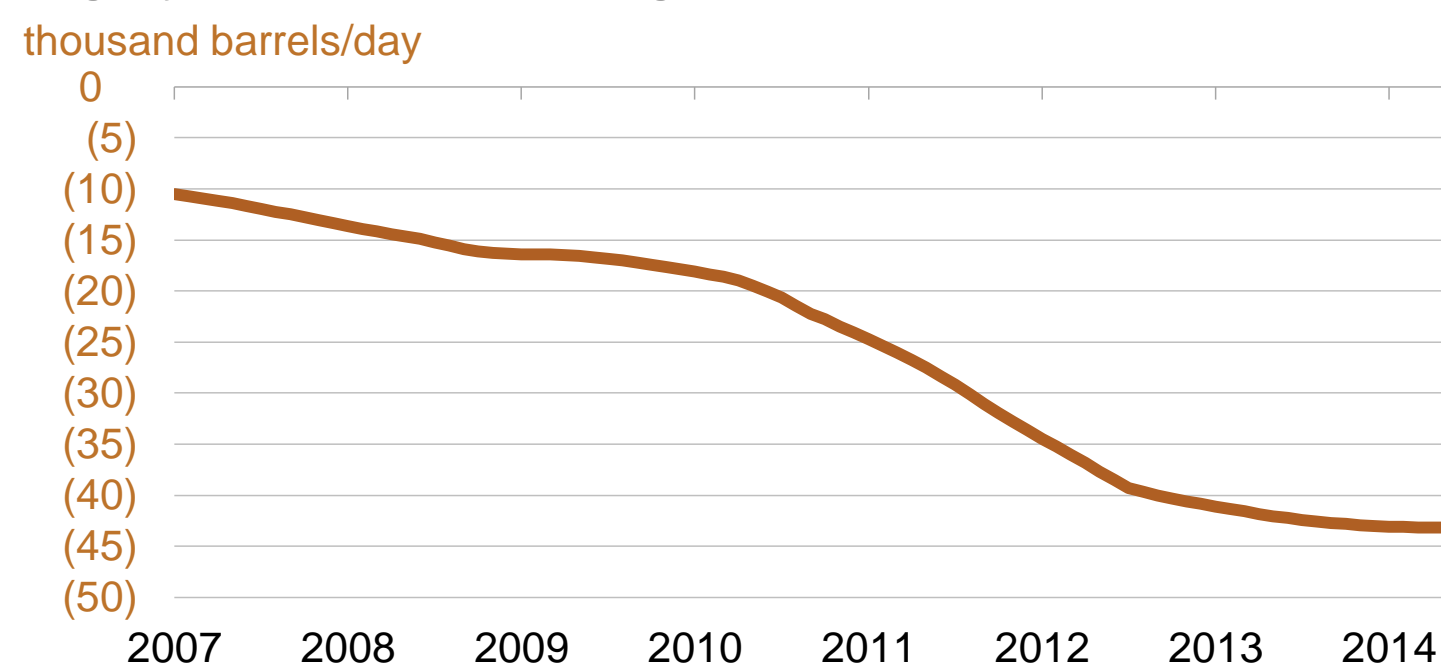
Permian
New-well oil production per rig



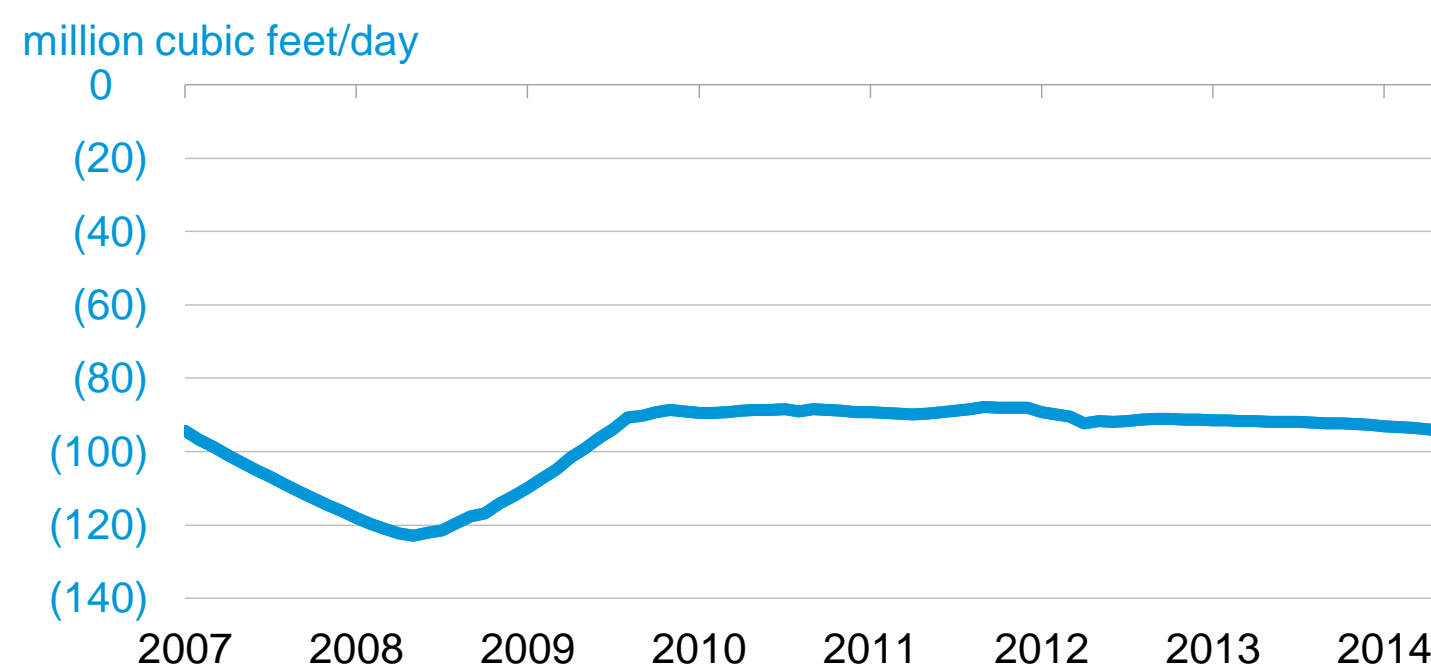
Permian
New-well gas production per rig



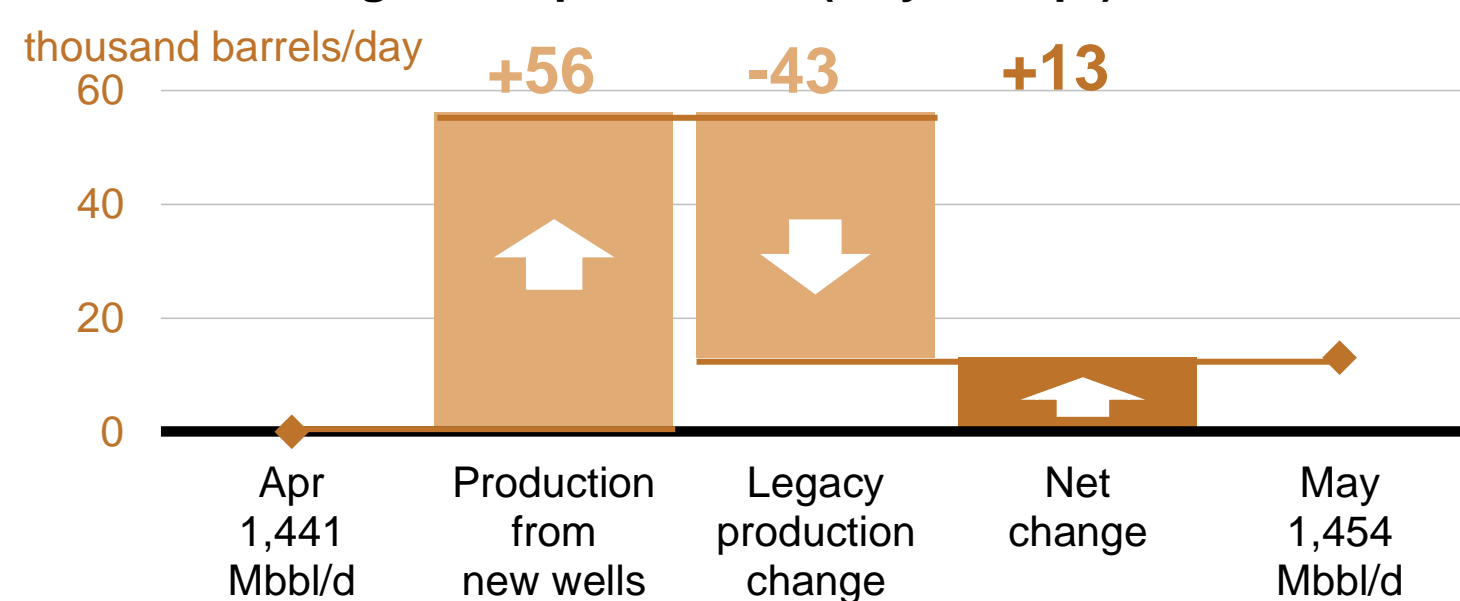
Permian
Legacy oil production change



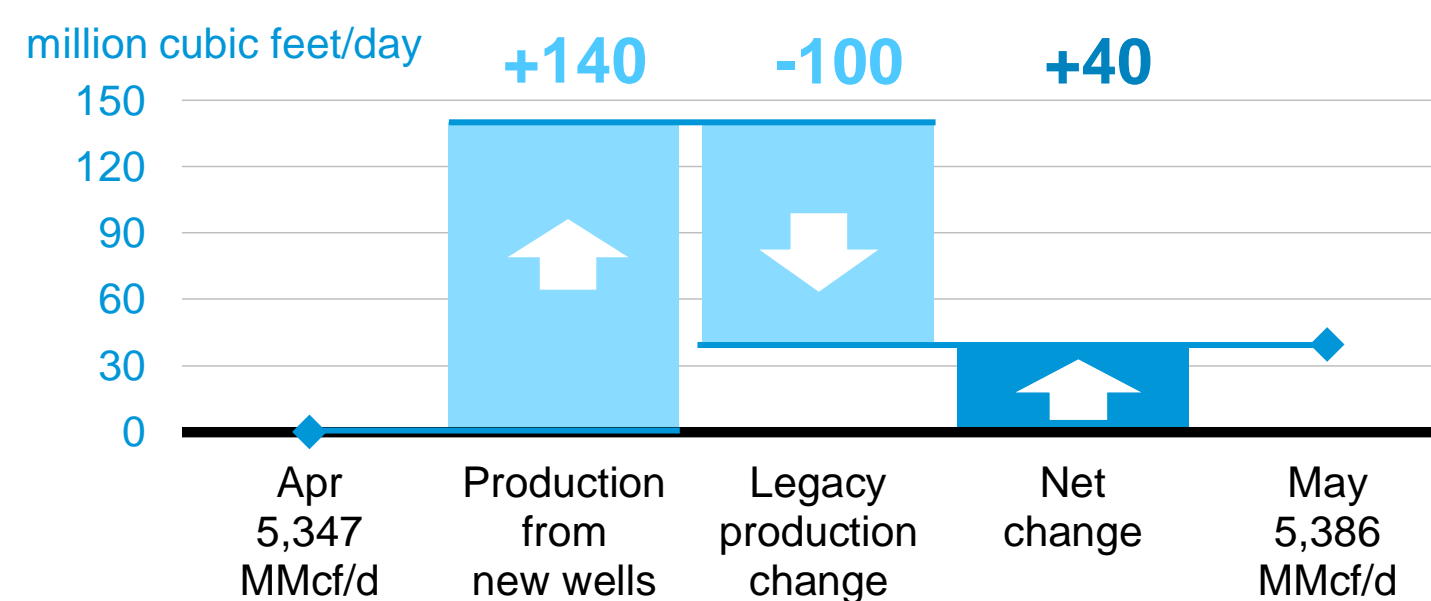
Permian
Legacy gas production change



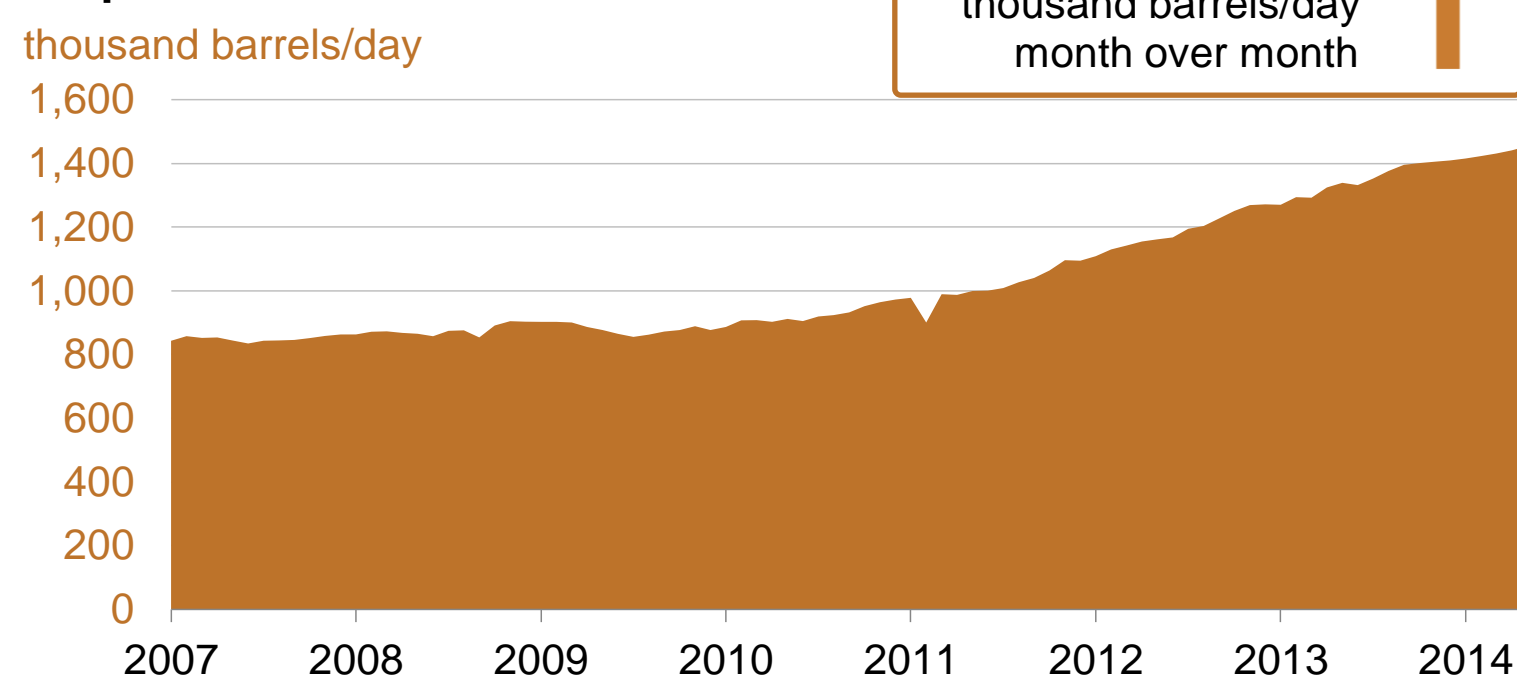
Permian
Indicated change in oil production (May vs. Apr)



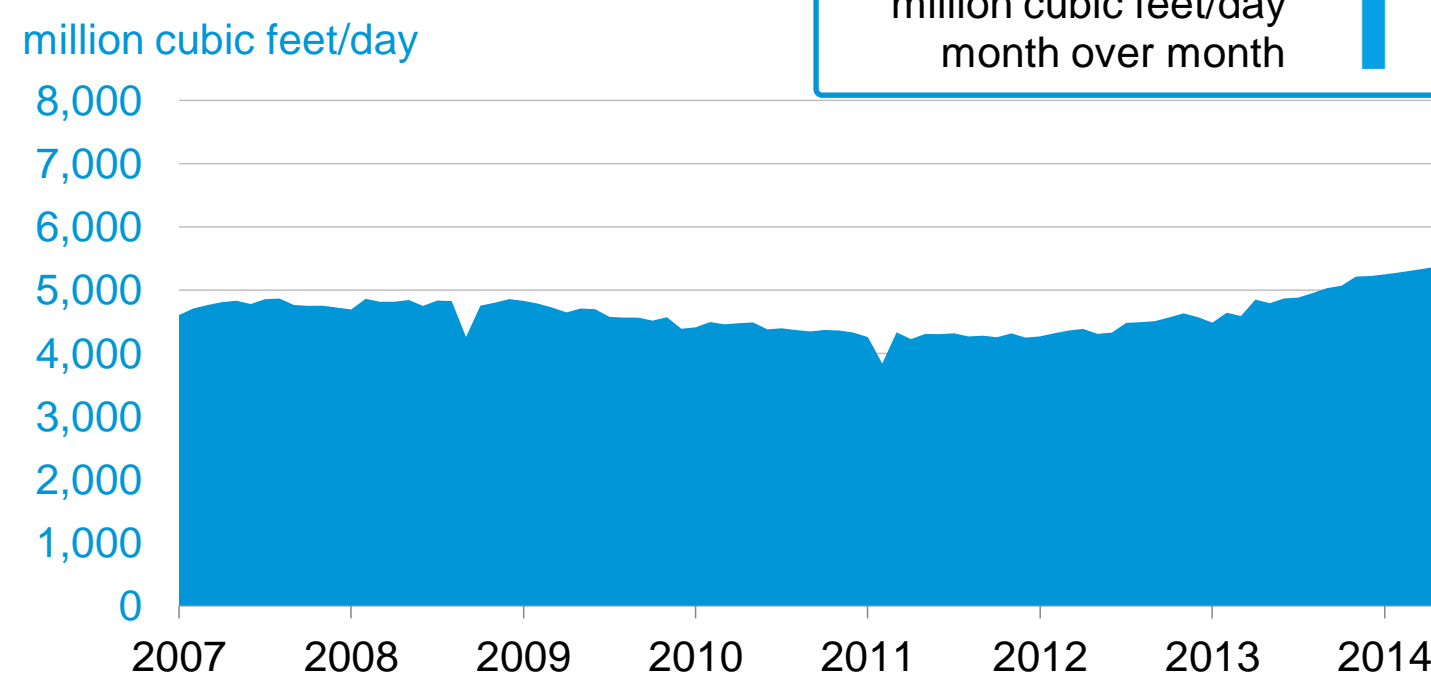
Permian
Indicated change in natural gas production (May vs. Apr)



Permian
Oil production



Permian
Natural gas production





The Drilling Productivity Report uses recent data on the total number of drilling rigs in operation along with estimates of drilling productivity and estimated changes in production from existing oil and natural gas wells to provide estimated changes in oil and natural gas production for six key fields. EIA's approach does not distinguish between oil-directed rigs and gas-directed rigs because once a well is completed it may produce both oil and gas; more than half of the wells do that.

Monthly additions from one average rig

Monthly additions from one average rig represent EIA's estimate of an average rig's¹ contribution to production of oil and natural gas from new wells.² The estimation of new-well production per rig uses several months of recent historical data on total production from new wells for each field divided by the region's monthly rig count, lagged by two months.³ Current- and next-month values are listed on the top header. The month-over-month change is listed alongside, with +/- signs and color-coded arrows to highlight the growth or decline in oil (brown) or natural gas (blue).

New-well oil/gas production per rig

Charts present historical estimated monthly additions from one average rig coupled with the number of total drilling rigs as reported by Baker Hughes.

Legacy oil and natural gas production change

Charts present EIA's estimates of total oil and gas production changes from all the wells other than the new wells. The trend is dominated by the well depletion rates, but other circumstances can influence the direction of the change. For example, well freeze-offs or hurricanes can cause production to significantly decline in any given month, resulting in a production increase the next month when production simply returns to normal levels.

Projected change in monthly oil/gas production

Charts present the combined effects of new-well production and changes to legacy production. Total new-well production is offset by the anticipated change in legacy production to derive the net change in production. The estimated change in production does not reflect external circumstances that can affect the actual rates, such as infrastructure constraints, bad weather, or shut-ins based on environmental or economic issues.

Oil/gas production

Charts present oil and natural gas production from both new and legacy wells since 2007. This production is based on all wells reported to the state oil and gas agencies. Where state data are not immediately available, EIA estimates the production based on estimated changes in new-well oil/gas production and the corresponding legacy change.

Footnotes:

1. The monthly average rig count used in this report is calculated from weekly data on total oil and gas rigs reported by Baker Hughes
2. A new well is defined as one that began producing for the first time in the previous month. Each well belongs to the new-well category for only one month. Reworked and recompleted wells are excluded from the calculation.
3. Rig count data lag production data because EIA has observed that the best predictor of the number of new wells beginning production in a given month is the count of rigs in operation two months earlier.



The data used in the preparation of this report come from the following sources. EIA is solely responsible for the analysis, calculations, and conclusions.

Drilling Info (<http://www.drillinginfo.com>) Source of production, permit, and spud data for counties associated with this report. Source of real-time rig location to estimate new wells spudded and completed throughout the United States.

Baker Hughes (<http://www.bakerhughes.com>) Source of rig and well counts by county, state, and basin.

North Dakota Oil and Gas Division (<https://www.dmr.nd.gov/oilgas>) Source of well production, permit, and completion data in the counties associated with this report in North Dakota

Railroad Commission of Texas (<http://www.rrc.state.tx.us>) Source of well production, permit, and completion data in the counties associated with this report in Texas

Pennsylvania Department of Environmental Protection (<https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/Welcome/Welcome.aspx>) Source of well production, permit, and completion data in the counties associated with this report in Pennsylvania

West Virginia Department of Environmental Protection (<http://www.dep.wv.gov/oil-and-gas/Pages/default.aspx>) Source of well production, permit, and completion data in the counties associated with this report in West Virginia

Colorado Oil and Gas Conservation Commission (<http://cogcc.state.co.us>) Source of well production, permit, and completion data in the counties associated with this report in Colorado

Wyoming Oil and Conservation Commission (<http://wogcc.state.wy.us>) Source of well production, permit, and completion data in the counties associated with this report in Wyoming

Louisiana Department of Natural Resources (<http://dnr.louisiana.gov>) Source of well production, permit, and completion data in the counties associated with this report in Louisiana